

BLESSING GREENHOUSES AND COMPOST FACILITY, INC.
Corrective Action Plan
Status Update July 13, 2021

1. Sediment and Stormwater Plan & Notice of Intent Submittal: The Sediment and Stormwater Plan and Notice of Intent are being revised to address the Sussex Conservation District's June 2021 comments. Stephens Environmental Consulting, Inc. (SECI), is currently revising the Plan in preparation for final submission.

The original Plan was revised to reflect the SCD's March 2021 comments and April 2021 building design modifications. SECI had follow-up conversations with the SCD in June 2021 to discuss technical items that arose after SECI started modifying the Plan, specifically Comment No. 14 (refer to attachment for SCD's March 2021 comments). SECI indicated the revised modeling approach has taken more time to solve than originally expected, but SECI has reached a solution. One comment included the SCD's concern that the design does not have any water surface elevation more than 0.05' higher than pre-development conditions. SECI noted that the imposition of the additional impervious surface contributing to POA-1c forced SECI to regrade and install a level spreader at the outfall (1" PVC sampling port in the wall as a sample point). As a result, SECI has completely revised the submerged gravel wetlands (SGW), draft attached.

During the week of July 5, 2021, John Justice, SCD reviewer, shared with SECI an internal method for checking the storage provided against what can be claimed against Rpv per DURMM for DURMM credit. From the beginning SECI was told and has been designing the SGWs and their forebays, to handle the bulk of the DURMM Rpv volume requirement. The revision process has been a laborious, time consuming, iterative process where SECI revises grading, obtains surface areas for stage storage data entry to HydroCAD, runs HydroCAD, checks the volume requirements against DURMM, falls short and tries again. On average, drafting, calculations and HydroCAD analysis ran about a day per iteration.

SECI is currently preparing the Plan for finalization with a tentative completion date of July 31, 2021.

2. Landscaping Plan: Bradshaw Landscape and Irrigation finalized the design and provided to Blessing on April 12, 2021. A copy of the Landscaping Plan was hand delivered to the Sussex County Planning and Zoning Office on May 10, 2021 by Mr. Tim Willard. No comments have been received.

3. Sussex County Planning and Zoning Office Meeting: The Preliminary Site Plan, including the Landscaping Plan, was hand delivered by Tim Willard on May 10, 2021. A follow-up email was sent to the Sussex County Planning and Zoning Office on

May 10, 2021 providing the following dropbox link, allowing access to electronic copies of submitted documents. No comments were received.

4. Building Design: Contract signed with Structor Engineering in December 2020 for the design of the building interior. The draft building design was received in March 2021. The design was reviewed and comments provided to the Engineering firm by March 30, 2021. The Fire Marshal was contacted in March 2021 to determine fire suppression requirements.

Additional comments were provided regarding the Building Design to address piping configurations and to address comments received by SECI regarding site grading/elevation changes. The design was revised and provided to Blessing Greenhouses and Compost Facility and SECI, on April 30, 2021. The building design was incorporated into the Preliminary Site Plan and submitted to the Sussex County Planning and Zoning Office for review.

Blessing met with Construction Project Management/DE certified engineering firms on June 15, 2021 (Whayland) and June 17, 2021 (SCS Engineering) in an effort to describe the project goals and identify suitable firm to manage all aspects of construction as well as finalize the building design.

5. Preliminary Site Plan: The Preliminary Site Plan was hand delivered on May 10, 2021 to the Planning and Zoning Office for review and approval as part of the Preliminary Site Plan process. The Preliminary Site Plan includes a new state-of-art compost building (compost activities including unloading of raw materials will occur under roof) and associated biofilter, stormwater best management practices to include submerged gravel wetlands and storm water conveyance systems, and a vegetative buffer prepared by a certified nursery professional.

6. Coastal Zone Application: A Coastal Zone Act Permit Application is required and will be prepared once details regarding composting operations (equipment and design) are finalized. Blessing is met with engineering firms in June 2021 in an effort to finalize building/operation design and obtain a list of equipment necessary for the composting operation. Blessing is currently drafting a list of equipment, operational projections, construction costs, etc., which are necessary to determine environmental impacts that must be included as part of the Coastal Zone Act Application. Once operational/building designs are finalized, the CZA Application will be prepared and submitted. RainWise Environmental Solutions has hosted two (2) preliminary conference calls with DNREC's Coastal Zone Branch to discuss the project and permitting requirements.

7. Environmental Permits: Appropriate Environmental Permits will be obtained once a Coastal Zone Act Permit is issued. As the need for environmental permits are identified, the CAP will be updated to identify the permit and application submission timeframe.

8. Final Site Plan: A Final Site Plan including all buildings, buffers, site improvements and a landscaping plan and stormwater management facilities will be completed and submitted to the Planning and Zoning Commission by December 31, 2022. It should be mentioned that the Blessing Greenhouses and Compost Facility anticipates submittal to occur well in advance of the December 31, 2022 deadline; with the construction of Phase 1 (compost building; submerged wetlands, vegetative berm) completed within 1 year of Final Site Plan approval. The timeframes identified within this document demonstrate the Facility's commitment to submitting and receiving approval of the Final Site Plan in an effort to complete construction of Phase 1 by Fall of 2022.

9. Stormwater Pollution Prevention Plan Revisions: The SWPPP will be revised to reflect facility modifications. This will be an ongoing process and DNREC will be notified and provided with each iteration of the document. The SWPPP was submitted to DNREC and approved on January 21, 2021. DNREC's letter of approval was forwarded to the EPA on January 22, 2021. The Facility continues to implement and maintain all programs required by its GSWP. Monthly Routine Inspections will continue to be performed and the SWPPP updated as warranted. A Semi-Annual Compliance Evaluation was conducted in June 2021.

10. Final Completion Date of all Work: The Blessing Greenhouses and Compost Facility anticipates construction of Phase 1 (including state-of-art building, vegetative berm, and submerged gravel wetlands) to be completed by Fall 2022. Blessing Greenhouses and Compost Facility anticipates construction of the vegetative berm and submerged wetlands to commence in the Fall 2021 and building construction to commence in Spring 2022. Construction completion is anticipated by Fall 2022.



March 15, 2021

Bill Stephens
Stephens Environmental Consulting, Inc.
bstephens@stephensenv.com

RE: Blessings Greenhouse & Compost Facility (Step 2) – Milford, DE

Mr. Stephens,

Sussex Conservation District has reviewed the sediment and stormwater management plans submitted for the above referenced project by letter on February 17, 2021. Additional information will be necessary for the plans to be approved. Please address the following comments:

1. Please have owner sign SCD Plan application. The “Agent Authorization” portion can be filled out for use in future correspondence.
2. Please provide all contact information for Owner/Developer in ‘Site Data’.
3. Please provide an [‘RPv Summary Table’](#).
4. Please limit all DURMM inputs to (2) decimal places. (Thousandths and beyond tend to skew resultants.)
5. It appears that the proposed contour above (west) of the proposed ‘Filtration System’ are mis-labeled. Elev. (7) becomes (8) and then back to (7) again. Please address.
6. Proposed elevation (7) does not appear to tie-in to existing @ the southwest corner (eastern side of proposed swale). Please address.
7. Proposed elevation (6) appears to tie-in to existing elevation (7) @ “Existing Earth Berm” next to (MW-2). Please address.
8. On sheet 5 of 19, it appears that PDA-1 & PDA-2 labels have been switched. If these are overlapping areas (i.e., Drainage Areas to BMPs vs Drainage Areas to POAs) please separate sheets for clarity.
9. Please provide profiles for each facility and conveyance swales per checklists. Be sure to include WSE for groundwater, seasonal ground water and each storm event.
10. Please provide all cross-sections and structure details to a defined scale per checklist.
11. Please include each facility in HydroCAD model. Submerged Gravel Wetlands have a porosity value of 40% in all stone and a max. 15% storage within wetland soil layer.
12. Please revise O&M note #7 to state “15-foot accessways” per current regulations.

13. Please use the attached Submerged Gravel Wetland - Sequence of Construction as a template. (Temporary Sediment Traps should be indicated on plans using the DNREC symbol "TSB"/"PST"/ "SST" etc.)
14. HydroCAD should model conveyance systems as "Pond" nodes opposed to "Reaches" to account for tailwater conditions effecting WSE.
 - a. WSE should be established at the discharge points via survey. Inverts of outfall pipes should be no lower than existing WSE or 1' above ditch bottom.
15. It appears the image on pages 11 & 12 of the soils report did not produce. Please address.
16. Please provide clear outline in report of how site is meeting compliance for both quality and quantitative discharge at each POA. For example, "RPv compliance at POA-1 is being met under DSSR 5.2.3.1.4.", "Cv & Fv compliance is being met under DSSR 5.3.3.1 & 5.4.3.1." and include tables substantiating results.

If you should have any questions concerning these comments, please do not hesitate to call.

Sincerely,

SUSSEX CONSERVATION DISTRICT

John Justice

Sediment & Stormwater Reviewer

Sequence of Construction: Submerged Gravel Wetland utilized as Sediment Trap

1. NOTIFY SCD (302-875-2105) AND IN WRITING AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER PLANS.
2. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES OR GRADING, A PRE-CONSTRUCTION MEETING MUST BE SCHEDULED AND CONDUCTED WITH SCD. THE LAND OWNER / DEVELOPER, CONTRACTOR AND CERTIFIED CONSTRUCTION REVIEWER (CCR) ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE-CONSTRUCTION MEETING; THE DESIGNER IS RECOMMENDED TO ATTEND.
3. OBTAIN ALL CITY, COUNTY AND STATE PERMITS PRIOR TO THE START OF CONSTRUCTION.
4. CLEAR AND GRUB AREAS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
5. ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE AGENCY CCR AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION. INSTALL PERIMETER CONTROLS PER THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS.
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 - B. INSTALL THE OUTFALL STRUCTURE; ENSURING THAT THE TOP INVERT OF THE OVERFLOW WEIR IS CONSTRUCTED LEVEL AND AT THE PROPER DESIGN ELEVATION.
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 - A. REMOVE SEDIMENT CONTROL DEVICES (I.E., PIT PUMPS, SKIMMERS).
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March 15, 2021

Bill Stephens
Stephens Environmental Consulting, Inc.
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RE: **Blessings Greenhouse & Compost Facility (Step 2) – Milford, DE**

Mr. Stephens,

Sussex Conservation District has reviewed the sediment and stormwater management plans submitted for the above referenced project by letter on February 17, 2021. Additional information will be necessary for the plans to be approved. Please address the following comments:

1. Please have owner sign SCD Plan application. The “Agent Authorization” portion can be filled out for use in future correspondence. **OK**
2. Please provide all contact information for Owner/Developer in ‘Site Data’. **Addressed**
3. Please provide an ‘[RPv Summary Table](#)’. **OK, on the plans or just in the report. I think we included an older version of this table in the report.**
4. Please limit all DURMM inputs to (2) decimal places. (Thousandths and beyond tend to skew resultants.) **OK**
5. It appears that the proposed contour above (west) of the proposed ‘Filtration System’ are mis-labeled. Elev. (7) becomes (8) and then back to (7) again. Please address. **Fixed**
6. Proposed elevation (7) does not appear to tie-in to existing @ the southwest corner (eastern side of proposed swale). Please address. **Fixed**
7. Proposed elevation (6) appears to tie-in to existing elevation (7) @ “Existing Earth Berm” next to (MW-2). Please address. **Fixed**
8. On sheet 5 of 19, it appears that PDA-1 & PDA-2 labels have been switched. If these are overlapping areas (i.e., Drainage Areas to BMPs vs Drainage Areas to POAs) please separate sheets for clarity. **Investigating, looks like overlay issue, will fix**
9. Please provide profiles for each facility and conveyance swales per checklists. Be sure to include WSE for groundwater, seasonal ground water and each storm event. **Will Do**
10. Please provide all cross-sections and structure details to a defined scale per checklist.
11. Please include each facility in HydroCAD model. Submerged Gravel Wetlands have a porosity value of 40% in all stone and a max. 15% storage within wetland soil layer. **There’s no infiltration, not sure what you are getting at here. All SGWs are interconnected with common outlets for Rpv, Cv & Fv. Lets discuss.**

12. Please revise O&M note #7 to state "15-foot accessways" per current regulations. **OK, Fixed**
13. Please use the attached Submerged Gravel Wetland - Sequence of Construction as a template. (Temporary Sediment Traps should be indicated on plans using the DNREC symbol "TSB"/"PST"/"SST" etc.) **OK, this is a big discussion item. The area where the SGWs and their forebays and the emergency spillway, etc is enormous and includes as much as 4 feet of buried concrete debris all of which must be removed. Dewatering will be required and it cannot be discharged anywhere except in the fields per agreement with DNREC WSB and per EPA NPDES permit. We will need a dewatering permit once we reach the actual water table. The area is also stabilized (concrete pads, grass, gravel) and no other disturbance will take place in the contributing drainage area while the excavation work progresses. I suspect we will need to install a temporary underdrain, maintain pumping and place a few lifts of suitable material back in the excavation to bring it back to grade and then construct the SGWs and forebays. The excavation will capture any sediment it receives but will not function as sediment trap. Let's plan on addressing this process in our call Monday.**
14. HydroCAD should model conveyance systems as "Pond" nodes opposed to "Reaches" to account for tailwater conditions effecting WSE. **OK**
- a. WSE should be established at the discharge points via survey. **POA-2 has no WSE POA-1 is like 1ft at the bridge and maybe 2 at POA-1a, dry at 1b & 1c.** Inverts of outfall pipes should be no lower than existing WSE or 1' above ditch bottom. **They are not submerged, all above observed winter base flow. We were informed that we do not need to consider flood conditions and I presume that includes WSE under those conditions Please clarify.**
15. It appears the image on pages 11 & 12 of the soils report did not produce. Please address. **Not sure what happened there but will verify that revised Soils report includes all pages.**
16. Please provide clear outline in report of how site is meeting compliance for both quality and quantitative discharge at each POA. For example, "RPv compliance at POA-1 is being met under DSSR 5.2.3.1.4.", "Cv & Fv compliance is being met under DSSR 5.3.3.1 & 5.4.3.1." **(see below)** and include tables substantiating results **Example?.**

POA-1 RPv addressed per 5.2.3.1.4 & 5.2.3.1.5

POA-1 Cv & Fv addressed per 5.3.3.5 & 5.4.3.5, respectively

POA-2 RPv addressed per 5.2.3.3 & 13.1.1.1 (offsets applied)

POA-2 Cv & Fv addressed per 5.3.3.1 & 5.4.3.1 (no net increase in peak runoff, detention with peak management provided per SAS ruling)

Please indicate you concur or suggest other compliance citations.

If you should have any questions concerning these comments, please do not hesitate to call.

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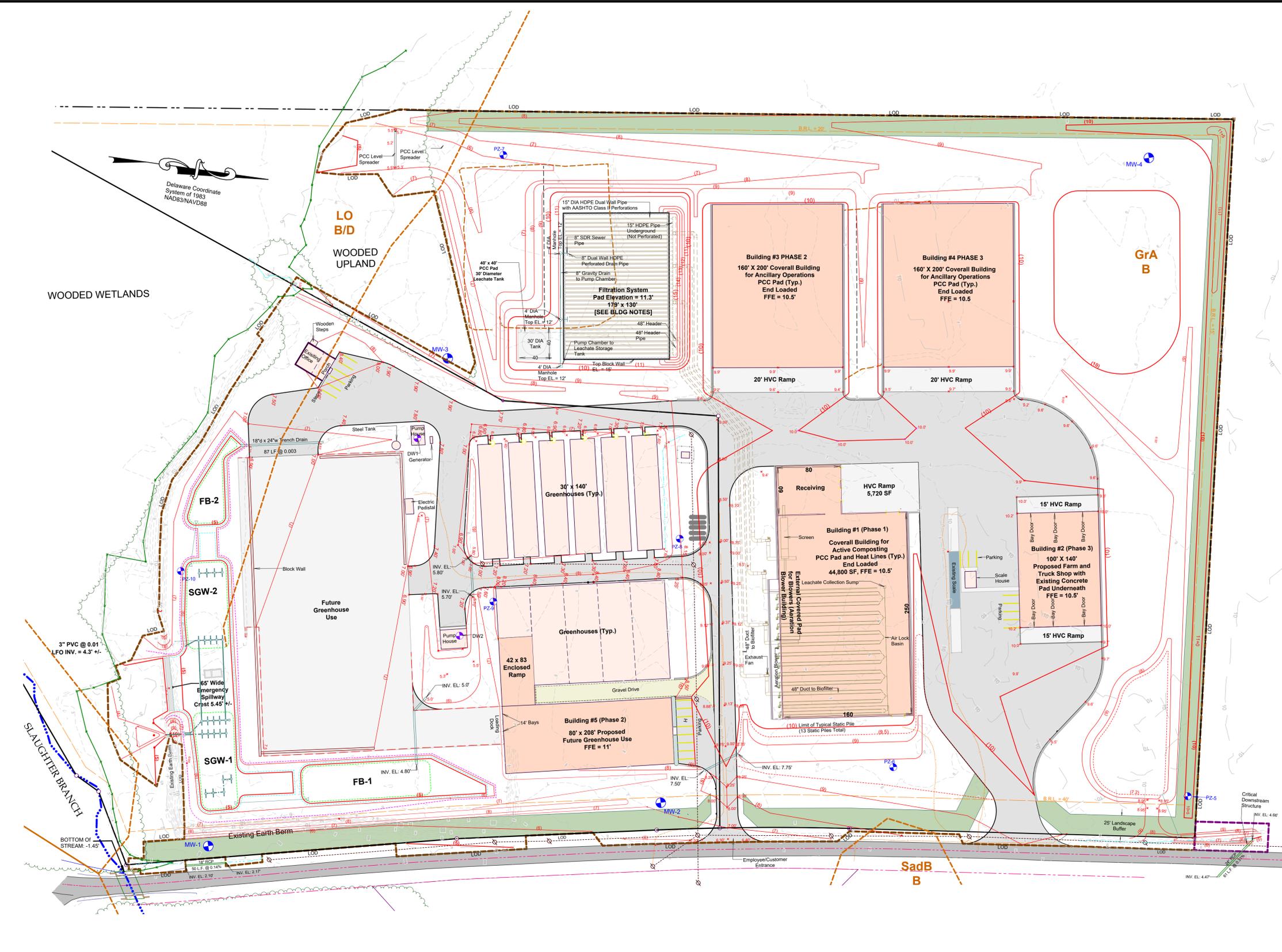
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- PROPOSED LEGEND**
- (10) Proposed Major Contours
 - (9) Proposed Minor Contours
 - Preliminary Wetland Delineation Line
 - Proposed Limit of Disturbance (LOD)
 - Proposed Block Wall
 - Proposed Heavy Use Concrete Ramp
 - Proposed Building with Concrete Floor
 - Proposed Pavement
 - Proposed Landscape Buffer
 - Proposed Spot Elevation
 - Proposed Outside Limit of Disturbance Line
 - Leachate Piping
 - Block Wall
 - Solid Piping
 - Underground Piping
 - Compost Building Piping

Blessing Greenhouses and Compost Facility, Inc.
Preliminary Sediment and Stormwater Management Plan
General Development with Preliminary Bulk Grading
 9372 Draper Road
 Milford, Cedar Creek Hundred
 Sussex County, Delaware 19563

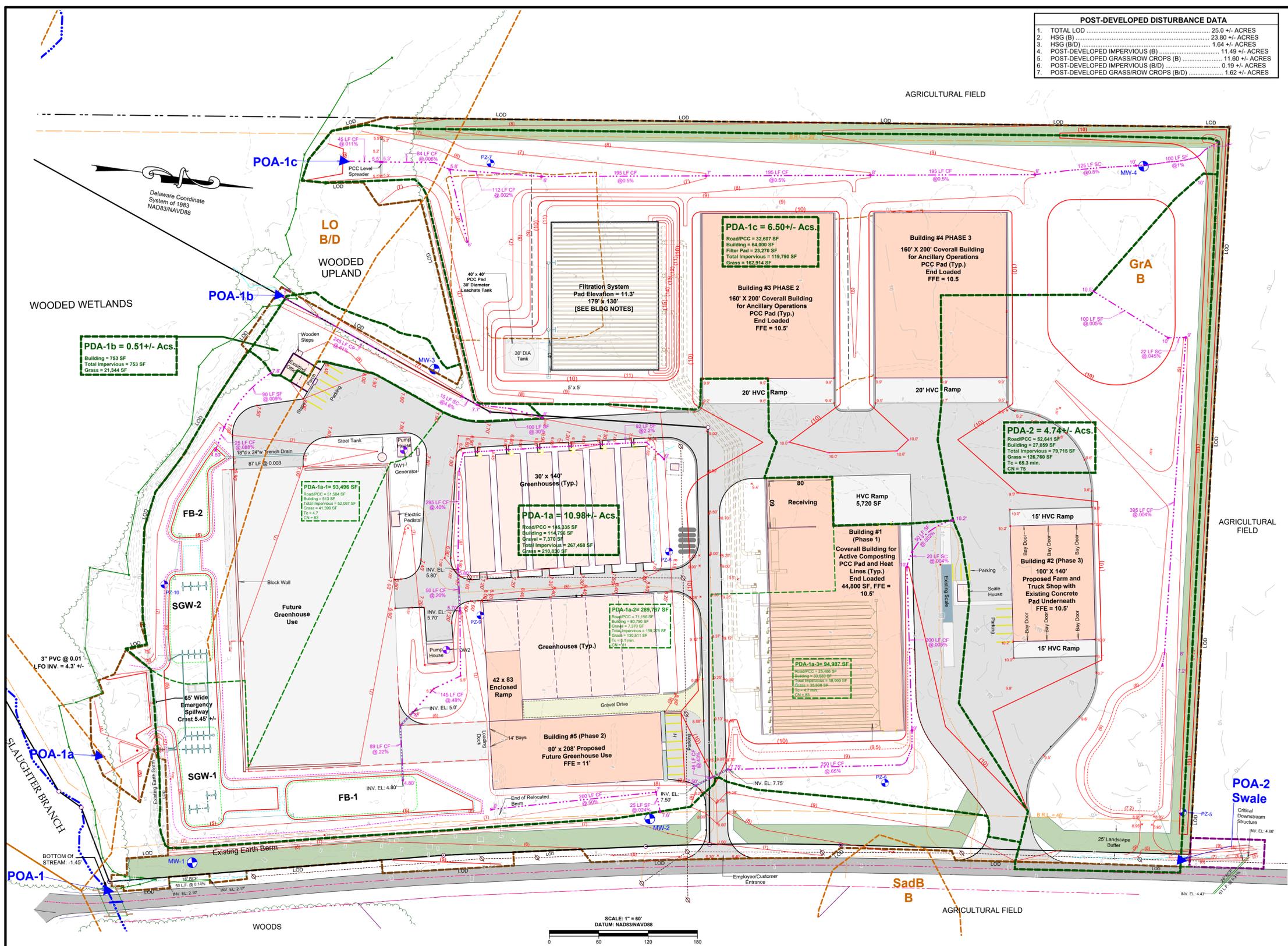
SCALE: 1" = 60'
 DATUM: NAD83/NAVD88

DISCUSSION DRAFT

Revision #	Date	By	Reference #
1	4/27/2021	WES/ETH	Building #1 Design
2	6/7/2021	WES/ETH	Per Structor Eng. Plans Rev. Date 4/29/2021

DRAWN BY: ETH/WES		CHECKED BY: MAN	
SHEET # 4 OF 19		DATE: 1/15/2021	
District 2-30 Map 15.00 Parcel 34.00 & PIO 35		PROJECT #: 1646.CJ	

		www.StephensENV.com P: (302) 286-0406 M: (302) 540-3453	
11 Alisa Court Rising Sun MD 21911			
General Development with Preliminary Bulk Grading Blessing Greenhouses and Compost Facility, Inc. 9372 Draper Road, Milford, Cedar Creek Hundred Sussex County, Delaware 19563			
DRAWING: 1646.CJ_Draft_Preliminary_Plan_1-15-2021.pcs		FILE PATH: S:\2021_Projects\1646\PCS	



POST-DEVELOPED DISTURBANCE DATA

1. TOTAL LOD	25.0 +/- ACRES
2. HSG (B)	23.80 +/- ACRES
3. HSG (B/D)	1.64 +/- ACRES
4. POST-DEVELOPED IMPERVIOUS (B)	11.49 +/- ACRES
5. POST-DEVELOPED GRASS/ROW CROPS (B)	11.60 +/- ACRES
6. POST-DEVELOPED IMPERVIOUS (B/D)	0.19 +/- ACRES
7. POST-DEVELOPED GRASS/ROW CROPS (B/D)	1.62 +/- ACRES

Rpv SUMMARY TABLE (1YR Storm Event)

POA SUBAREA	TOTAL AREA	Q(cfs)	Runoff Area (sf)	Runoff Vol. (acre-ft)	Runoff Depth (in.)	Flow Length (ft.)	Tc (min.)	CN
PDA-1a	10.98 +/- ACRES							83
PDA-1a-1	2.15 +/- ACRES	3.05	93,496	0.260	1.45	40	4.7	83
PDA-1a-2	6.65 +/- ACRES	8.55	289,787	0.750	1.35	225	5.1	81
PDA-1a-3	2.18 +/- ACRES	3.21	94,907	0.273	1.50	520	4.7	84
PDA-1b	.51 +/- ACRES	0.11	22,886	0.026	0.59	360	32.9	59
PDA-1c	6.50 +/- ACRES	12.96	283,058	0.476	0.88	922	65.5	69
PDA-2	4.74 +/- ACRES	1.27	205,619	0.432	1.09	517	65.3	75

- PROPOSED DRAINAGE LEGEND**
- Proposed Drainage Area Boundary
 - Tc Label
 - SF = Sheet Flow
 - SC = Shallow Concentrated Flow
 - CF = Channel Flow
 - LFO = Low Flow Orifice
 - Drainage Area Contributing to Point of Analysis
- PROPOSED LEGEND**
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 DATUM: NAD83/NAVD88

Blessing Greenhouses and Compost Facility, Inc.
Preliminary Sediment and Stormwater Management Plan
Proposed Post-Construction Drainage Area with Preliminary Bulk Grading

9372 Draper Road
 Milford, Cedar Creek Hundred
 Sussex County, Delaware 19563

DISCUSSION DRAFT

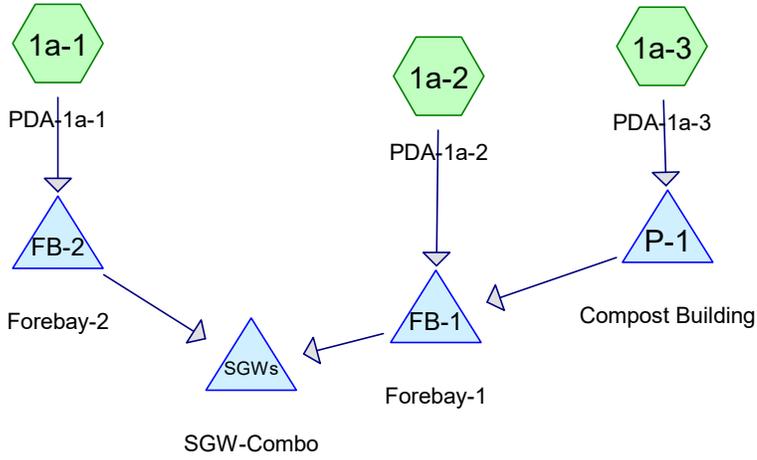
Revision #	Date	By	Reference #
1	4/27/2021	WSE/ETH	Building #1 Design
2	6/7/2021	WSE/ETH	Per/Structor Eng. Plans Rev. Date 4/29/2021

11 Alisa Court
 Rising Sun MD 21911
 www.StephensENV.com
 P: (302) 286-0406
 M: (302) 540-3453

Proposed Post-Construction Drainage Plan (with Preliminary Bulk Grading)
 Blessing Greenhouses and Compost Facility, Inc.
 9372 Draper Road, Milford, Cedar Creek Hundred
 Sussex County, Delaware 19563

DRAWN BY: ETH/WES CHECKED BY: MAN
 SHEET #: 5 OF 19
 DATE: June 7, 2021 FILENAME: 1646.G1_Draft_Prel-Final_Plan_1-15-2021.pcs
 District 2-30 Map 15.00 Parcel 34.00 & P/O 35 PROJECT #: 1646.CJ FILE PATH: S:\2021_Projects\1646\PCS

**PDA-1a to POA-1a
NPDES Outfall #1**



**DA-1b
Pre-Development**



**PDA-1b
Post-Development**

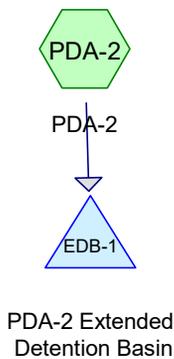


DA-2 Pre-Development

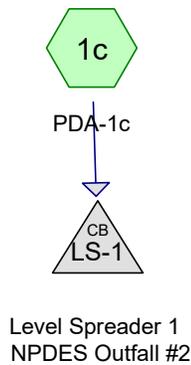


**PDA-1c to POA-1c
NPDES Outfall #2**

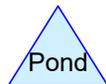
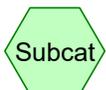
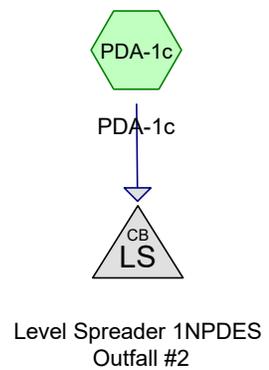
**PDA-2 to POA-2
NPDES Outfall #3**



**PDA-1c
Post-Development**



**PDA-1c
Post-Development-No Pad**



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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	11.614	0.000	0.000	0.000	11.614	>75% Grass cover, Good	1a-1, 1a-2, 1a-3, DA-2, PDA-2
0.000	7.492	0.000	0.000	0.000	7.492	Brush, Good	1c, PDA-1c
0.000	0.000	0.000	0.000	0.083	0.083	Forebay 1 @ 5.5 Wetland D	1a-1
0.000	0.401	0.000	0.000	0.000	0.401	Gravel surface	DA-2
0.000	0.000	0.000	0.000	0.012	0.012	Office Roof	1a-1
0.000	1.366	0.000	0.000	0.000	1.366	Paved parking	DA-2, PDA-2
0.000	0.000	0.000	0.000	1.184	1.184	Roadway & Parking	1a-1
0.000	5.091	0.000	0.000	0.000	5.091	Roofs	1b, 1c, PDA-1b, PDA-1c, PDA-2
0.000	1.354	0.000	0.000	0.000	1.354	Roofs, Paved parking	1a-3
0.000	0.000	0.000	0.000	0.147	0.147	SGW-2 @ 5.5-wetland-D	1a-1
0.000	0.984	0.000	0.000	0.000	0.984	Woods/grass comb., Good	1b, PDA-1b
0.000	0.000	0.000	0.000	3.656	3.656	combined impervious	1a-2
0.000	0.000	0.000	0.000	0.497	0.497	filtration Pad	1c
0.000	0.000	0.000	0.000	0.037	0.037	leachate pad	1c
0.000	0.000	0.000	0.000	0.037	0.037	leachate tank pad	PDA-1c
0.000	28.303	0.000	0.000	5.654	33.957	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	EDB-1	7.10	7.00	57.0	0.0018	0.011	6.0	0.0	0.0
2	FB-1	4.80	4.50	85.0	0.0035	0.013	18.0	0.0	0.0
3	FB-2	4.80	4.50	48.0	0.0062	0.013	12.0	0.0	0.0
4	P-1	8.00	7.50	46.0	0.0109	0.010	48.0	24.0	0.0
5	SGWs	4.30	4.13	19.0	0.0089	0.013	12.0	0.0	0.0

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Notes Listing (all nodes)

Line#	Node Number	Notes
1	DA-2	Initial Mannings on trap swale set at 0.15 pending depth assessment
2	PDA-2	Initial Mannings on trap swale set at 0.15 pending depth assessment

Summary for Subcatchment 1a-1: PDA-1a-1

Runoff = 7.49 cfs @ 12.13 hrs, Volume= 0.617 af, Depth= 3.45"

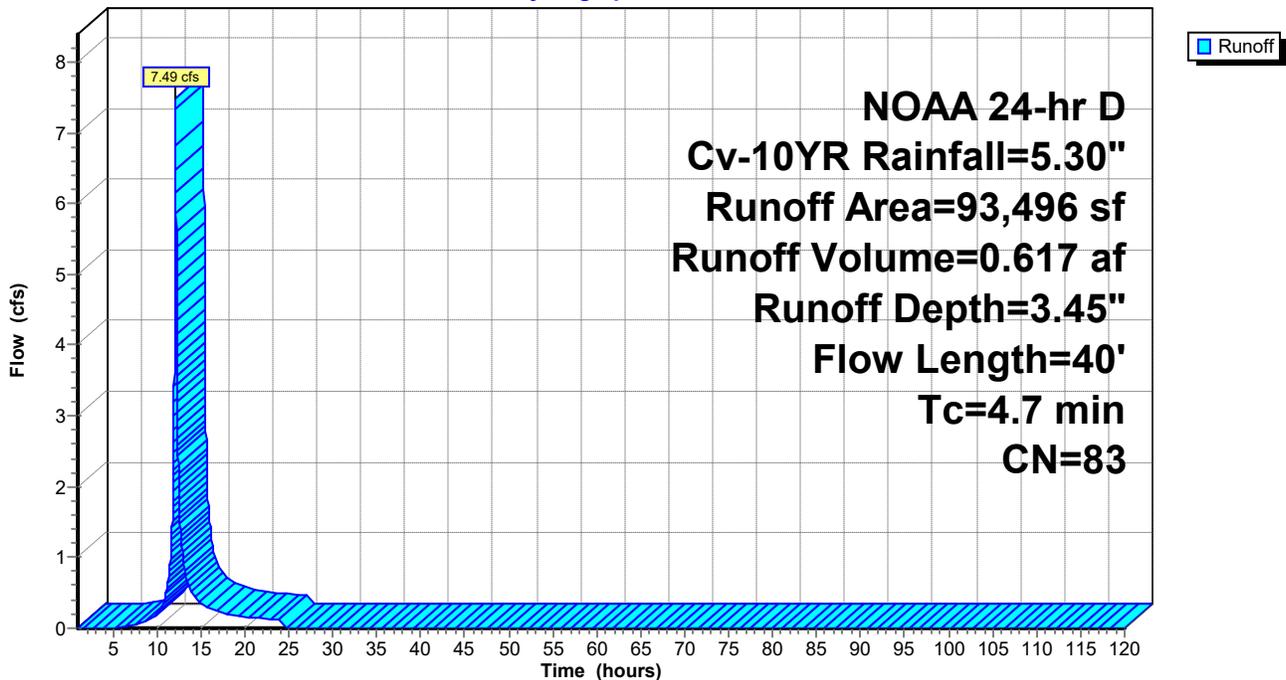
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
* 51,584	98	Roadway & Parking
* 513	98	Office Roof
* 6,404	73	SGW-2 @ 5.5-wetland-D
* 3,625	73	Forebay 1 @ 5.5 Wetland D
31,370	61	>75% Grass cover, Good, HSG B
93,496	83	Weighted Average
41,399		44.28% Pervious Area
52,097		55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	30	0.0270	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
0.0	10	0.2200	7.04		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.7	40	Total			

Subcatchment 1a-1: PDA-1a-1

Hydrograph



Hydrograph for Subcatchment 1a-1: PDA-1a-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	3.45	0.00	103.00	5.30	3.45	0.00
2.00	0.13	0.00	0.00	53.00	5.30	3.45	0.00	104.00	5.30	3.45	0.00
3.00	0.20	0.00	0.00	54.00	5.30	3.45	0.00	105.00	5.30	3.45	0.00
4.00	0.28	0.00	0.00	55.00	5.30	3.45	0.00	106.00	5.30	3.45	0.00
5.00	0.36	0.00	0.00	56.00	5.30	3.45	0.00	107.00	5.30	3.45	0.00
6.00	0.45	0.00	0.01	57.00	5.30	3.45	0.00	108.00	5.30	3.45	0.00
7.00	0.56	0.01	0.03	58.00	5.30	3.45	0.00	109.00	5.30	3.45	0.00
8.00	0.69	0.03	0.06	59.00	5.30	3.45	0.00	110.00	5.30	3.45	0.00
9.00	0.84	0.07	0.11	60.00	5.30	3.45	0.00	111.00	5.30	3.45	0.00
10.00	1.05	0.15	0.21	61.00	5.30	3.45	0.00	112.00	5.30	3.45	0.00
11.00	1.38	0.31	0.48	62.00	5.30	3.45	0.00	113.00	5.30	3.45	0.00
12.00	2.54	1.09	3.97	63.00	5.30	3.45	0.00	114.00	5.30	3.45	0.00
13.00	3.92	2.22	1.00	64.00	5.30	3.45	0.00	115.00	5.30	3.45	0.00
14.00	4.25	2.50	0.50	65.00	5.30	3.45	0.00	116.00	5.30	3.45	0.00
15.00	4.46	2.69	0.34	66.00	5.30	3.45	0.00	117.00	5.30	3.45	0.00
16.00	4.61	2.83	0.28	67.00	5.30	3.45	0.00	118.00	5.30	3.45	0.00
17.00	4.74	2.94	0.23	68.00	5.30	3.45	0.00	119.00	5.30	3.45	0.00
18.00	4.85	3.04	0.19	69.00	5.30	3.45	0.00	120.00	5.30	3.45	0.00
19.00	4.94	3.12	0.17	70.00	5.30	3.45	0.00				
20.00	5.02	3.19	0.16	71.00	5.30	3.45	0.00				
21.00	5.10	3.27	0.15	72.00	5.30	3.45	0.00				
22.00	5.17	3.33	0.14	73.00	5.30	3.45	0.00				
23.00	5.24	3.39	0.13	74.00	5.30	3.45	0.00				
24.00	5.30	3.45	0.12	75.00	5.30	3.45	0.00				
25.00	5.30	3.45	0.00	76.00	5.30	3.45	0.00				
26.00	5.30	3.45	0.00	77.00	5.30	3.45	0.00				
27.00	5.30	3.45	0.00	78.00	5.30	3.45	0.00				
28.00	5.30	3.45	0.00	79.00	5.30	3.45	0.00				
29.00	5.30	3.45	0.00	80.00	5.30	3.45	0.00				
30.00	5.30	3.45	0.00	81.00	5.30	3.45	0.00				
31.00	5.30	3.45	0.00	82.00	5.30	3.45	0.00				
32.00	5.30	3.45	0.00	83.00	5.30	3.45	0.00				
33.00	5.30	3.45	0.00	84.00	5.30	3.45	0.00				
34.00	5.30	3.45	0.00	85.00	5.30	3.45	0.00				
35.00	5.30	3.45	0.00	86.00	5.30	3.45	0.00				
36.00	5.30	3.45	0.00	87.00	5.30	3.45	0.00				
37.00	5.30	3.45	0.00	88.00	5.30	3.45	0.00				
38.00	5.30	3.45	0.00	89.00	5.30	3.45	0.00				
39.00	5.30	3.45	0.00	90.00	5.30	3.45	0.00				
40.00	5.30	3.45	0.00	91.00	5.30	3.45	0.00				
41.00	5.30	3.45	0.00	92.00	5.30	3.45	0.00				
42.00	5.30	3.45	0.00	93.00	5.30	3.45	0.00				
43.00	5.30	3.45	0.00	94.00	5.30	3.45	0.00				
44.00	5.30	3.45	0.00	95.00	5.30	3.45	0.00				
45.00	5.30	3.45	0.00	96.00	5.30	3.45	0.00				
46.00	5.30	3.45	0.00	97.00	5.30	3.45	0.00				
47.00	5.30	3.45	0.00	98.00	5.30	3.45	0.00				
48.00	5.30	3.45	0.00	99.00	5.30	3.45	0.00				
49.00	5.30	3.45	0.00	100.00	5.30	3.45	0.00				
50.00	5.30	3.45	0.00	101.00	5.30	3.45	0.00				
51.00	5.30	3.45	0.00	102.00	5.30	3.45	0.00				

Summary for Subcatchment 1a-2: PDA-1a-2

Runoff = 21.44 cfs @ 12.13 hrs, Volume= 1.803 af, Depth= 3.25"

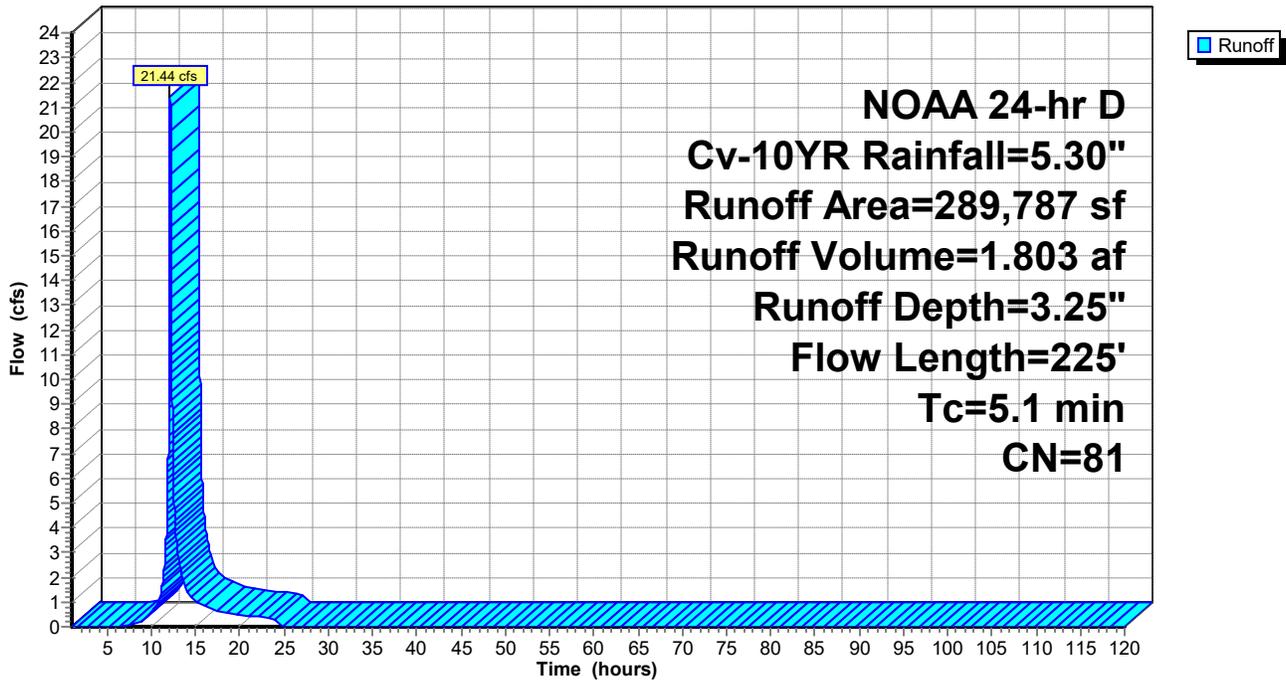
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
130,511	61	>75% Grass cover, Good, HSG B
* 159,276	98	combined impervious
289,787	81	Weighted Average
130,511		45.04% Pervious Area
159,276		54.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	25	0.0240	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
0.9	200	0.0050	3.66	212.41	Trap/Vee/Rect Channel Flow, OCF Bot.W=4.00' D=2.00' Z= 20.0 & 5.0 '/' Top.W=54.00' n= 0.030 Short grass
5.1	225	Total			

Subcatchment 1a-2: PDA-1a-2

Hydrograph



Blessing-Preliminary_H&H_Analysis-Safe_Con_Cv-Fv-N NOAA 24-hr D Cv-10YR Rainfall=5.30"

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Hydrograph for Subcatchment 1a-2: PDA-1a-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	3.25	0.00	103.00	5.30	3.25	0.00
2.00	0.13	0.00	0.00	53.00	5.30	3.25	0.00	104.00	5.30	3.25	0.00
3.00	0.20	0.00	0.00	54.00	5.30	3.25	0.00	105.00	5.30	3.25	0.00
4.00	0.28	0.00	0.00	55.00	5.30	3.25	0.00	106.00	5.30	3.25	0.00
5.00	0.36	0.00	0.00	56.00	5.30	3.25	0.00	107.00	5.30	3.25	0.00
6.00	0.45	0.00	0.00	57.00	5.30	3.25	0.00	108.00	5.30	3.25	0.00
7.00	0.56	0.00	0.05	58.00	5.30	3.25	0.00	109.00	5.30	3.25	0.00
8.00	0.69	0.02	0.14	59.00	5.30	3.25	0.00	110.00	5.30	3.25	0.00
9.00	0.84	0.05	0.26	60.00	5.30	3.25	0.00	111.00	5.30	3.25	0.00
10.00	1.05	0.12	0.56	61.00	5.30	3.25	0.00	112.00	5.30	3.25	0.00
11.00	1.38	0.25	1.30	62.00	5.30	3.25	0.00	113.00	5.30	3.25	0.00
12.00	2.54	0.97	11.09	63.00	5.30	3.25	0.00	114.00	5.30	3.25	0.00
13.00	3.92	2.06	3.01	64.00	5.30	3.25	0.00	115.00	5.30	3.25	0.00
14.00	4.25	2.33	1.50	65.00	5.30	3.25	0.00	116.00	5.30	3.25	0.00
15.00	4.46	2.51	1.03	66.00	5.30	3.25	0.00	117.00	5.30	3.25	0.00
16.00	4.61	2.65	0.84	67.00	5.30	3.25	0.00	118.00	5.30	3.25	0.00
17.00	4.74	2.76	0.71	68.00	5.30	3.25	0.00	119.00	5.30	3.25	0.00
18.00	4.85	2.85	0.57	69.00	5.30	3.25	0.00	120.00	5.30	3.25	0.00
19.00	4.94	2.93	0.52	70.00	5.30	3.25	0.00				
20.00	5.02	3.00	0.49	71.00	5.30	3.25	0.00				
21.00	5.10	3.07	0.45	72.00	5.30	3.25	0.00				
22.00	5.17	3.14	0.42	73.00	5.30	3.25	0.00				
23.00	5.24	3.20	0.38	74.00	5.30	3.25	0.00				
24.00	5.30	3.25	0.35	75.00	5.30	3.25	0.00				
25.00	5.30	3.25	0.00	76.00	5.30	3.25	0.00				
26.00	5.30	3.25	0.00	77.00	5.30	3.25	0.00				
27.00	5.30	3.25	0.00	78.00	5.30	3.25	0.00				
28.00	5.30	3.25	0.00	79.00	5.30	3.25	0.00				
29.00	5.30	3.25	0.00	80.00	5.30	3.25	0.00				
30.00	5.30	3.25	0.00	81.00	5.30	3.25	0.00				
31.00	5.30	3.25	0.00	82.00	5.30	3.25	0.00				
32.00	5.30	3.25	0.00	83.00	5.30	3.25	0.00				
33.00	5.30	3.25	0.00	84.00	5.30	3.25	0.00				
34.00	5.30	3.25	0.00	85.00	5.30	3.25	0.00				
35.00	5.30	3.25	0.00	86.00	5.30	3.25	0.00				
36.00	5.30	3.25	0.00	87.00	5.30	3.25	0.00				
37.00	5.30	3.25	0.00	88.00	5.30	3.25	0.00				
38.00	5.30	3.25	0.00	89.00	5.30	3.25	0.00				
39.00	5.30	3.25	0.00	90.00	5.30	3.25	0.00				
40.00	5.30	3.25	0.00	91.00	5.30	3.25	0.00				
41.00	5.30	3.25	0.00	92.00	5.30	3.25	0.00				
42.00	5.30	3.25	0.00	93.00	5.30	3.25	0.00				
43.00	5.30	3.25	0.00	94.00	5.30	3.25	0.00				
44.00	5.30	3.25	0.00	95.00	5.30	3.25	0.00				
45.00	5.30	3.25	0.00	96.00	5.30	3.25	0.00				
46.00	5.30	3.25	0.00	97.00	5.30	3.25	0.00				
47.00	5.30	3.25	0.00	98.00	5.30	3.25	0.00				
48.00	5.30	3.25	0.00	99.00	5.30	3.25	0.00				
49.00	5.30	3.25	0.00	100.00	5.30	3.25	0.00				
50.00	5.30	3.25	0.00	101.00	5.30	3.25	0.00				
51.00	5.30	3.25	0.00	102.00	5.30	3.25	0.00				

Summary for Subcatchment 1a-3: PDA-1a-3

Runoff = 7.80 cfs @ 12.13 hrs, Volume= 0.644 af, Depth= 3.55"

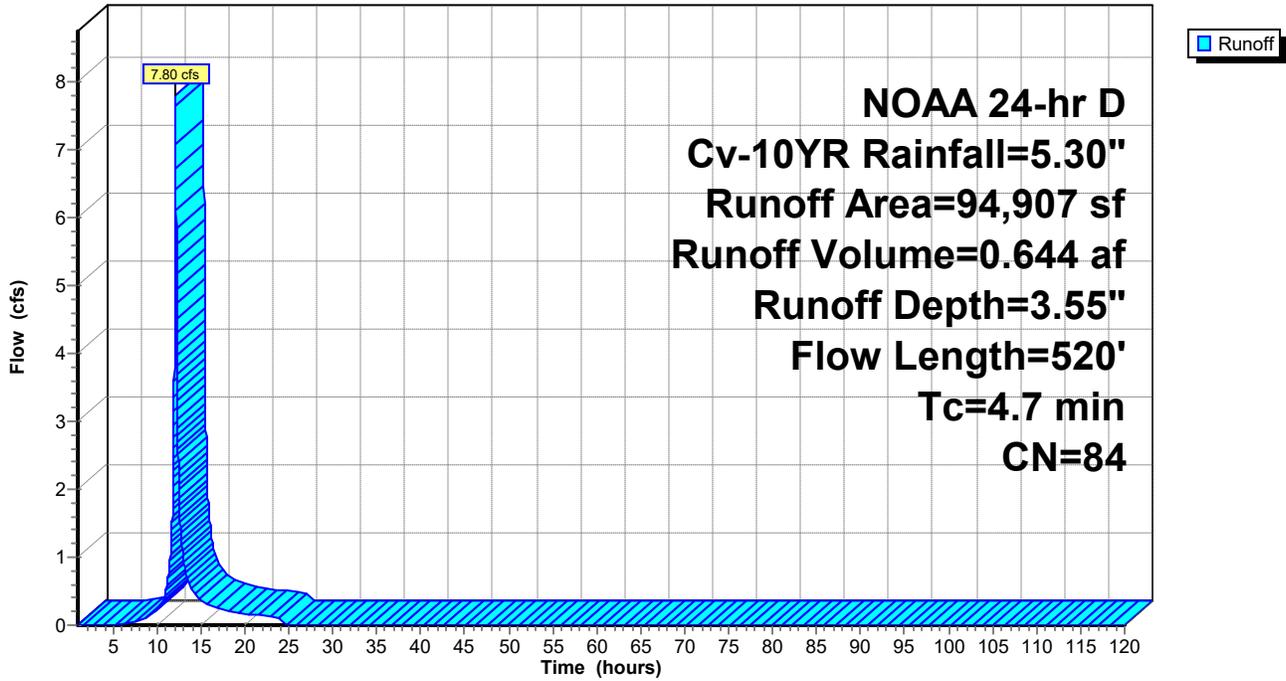
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
35,908	61	>75% Grass cover, Good, HSG B
* 58,999	98	Roofs, Paved parking, HSG B
94,907	84	Weighted Average
35,908		37.83% Pervious Area
58,999		62.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0020	0.49		Sheet Flow, SF Smooth surfaces n= 0.011 P2= 3.40"
0.4	20	0.0040	0.95		Shallow Concentrated Flow, SCF Grassed Waterway Kv= 15.0 fps
1.7	200	0.0050	2.00	6.01	Trap/Vee/Rect Channel Flow, Bot.W=1.00' D=0.50' Z= 10.0 '/' Top.W=11.00' n= 0.022 Earth, clean & straight
0.9	250	0.0060	4.64	371.02	Trap/Vee/Rect Channel Flow, across enclosed contour area Bot.W=20.00' D=2.00' Z= 10.0 '/' Top.W=60.00' n= 0.030 Short grass
4.7	520	Total			

Subcatchment 1a-3: PDA-1a-3

Hydrograph



Hydrograph for Subcatchment 1a-3: PDA-1a-3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	3.55	0.00	103.00	5.30	3.55	0.00
2.00	0.13	0.00	0.00	53.00	5.30	3.55	0.00	104.00	5.30	3.55	0.00
3.00	0.20	0.00	0.00	54.00	5.30	3.55	0.00	105.00	5.30	3.55	0.00
4.00	0.28	0.00	0.00	55.00	5.30	3.55	0.00	106.00	5.30	3.55	0.00
5.00	0.36	0.00	0.00	56.00	5.30	3.55	0.00	107.00	5.30	3.55	0.00
6.00	0.45	0.00	0.01	57.00	5.30	3.55	0.00	108.00	5.30	3.55	0.00
7.00	0.56	0.02	0.04	58.00	5.30	3.55	0.00	109.00	5.30	3.55	0.00
8.00	0.69	0.04	0.08	59.00	5.30	3.55	0.00	110.00	5.30	3.55	0.00
9.00	0.84	0.09	0.12	60.00	5.30	3.55	0.00	111.00	5.30	3.55	0.00
10.00	1.05	0.17	0.23	61.00	5.30	3.55	0.00	112.00	5.30	3.55	0.00
11.00	1.38	0.34	0.51	62.00	5.30	3.55	0.00	113.00	5.30	3.55	0.00
12.00	2.54	1.15	4.15	63.00	5.30	3.55	0.00	114.00	5.30	3.55	0.00
13.00	3.92	2.30	1.03	64.00	5.30	3.55	0.00	115.00	5.30	3.55	0.00
14.00	4.25	2.59	0.51	65.00	5.30	3.55	0.00	116.00	5.30	3.55	0.00
15.00	4.46	2.78	0.35	66.00	5.30	3.55	0.00	117.00	5.30	3.55	0.00
16.00	4.61	2.92	0.29	67.00	5.30	3.55	0.00	118.00	5.30	3.55	0.00
17.00	4.74	3.04	0.24	68.00	5.30	3.55	0.00	119.00	5.30	3.55	0.00
18.00	4.85	3.13	0.19	69.00	5.30	3.55	0.00	120.00	5.30	3.55	0.00
19.00	4.94	3.21	0.18	70.00	5.30	3.55	0.00				
20.00	5.02	3.29	0.16	71.00	5.30	3.55	0.00				
21.00	5.10	3.36	0.15	72.00	5.30	3.55	0.00				
22.00	5.17	3.43	0.14	73.00	5.30	3.55	0.00				
23.00	5.24	3.49	0.13	74.00	5.30	3.55	0.00				
24.00	5.30	3.55	0.12	75.00	5.30	3.55	0.00				
25.00	5.30	3.55	0.00	76.00	5.30	3.55	0.00				
26.00	5.30	3.55	0.00	77.00	5.30	3.55	0.00				
27.00	5.30	3.55	0.00	78.00	5.30	3.55	0.00				
28.00	5.30	3.55	0.00	79.00	5.30	3.55	0.00				
29.00	5.30	3.55	0.00	80.00	5.30	3.55	0.00				
30.00	5.30	3.55	0.00	81.00	5.30	3.55	0.00				
31.00	5.30	3.55	0.00	82.00	5.30	3.55	0.00				
32.00	5.30	3.55	0.00	83.00	5.30	3.55	0.00				
33.00	5.30	3.55	0.00	84.00	5.30	3.55	0.00				
34.00	5.30	3.55	0.00	85.00	5.30	3.55	0.00				
35.00	5.30	3.55	0.00	86.00	5.30	3.55	0.00				
36.00	5.30	3.55	0.00	87.00	5.30	3.55	0.00				
37.00	5.30	3.55	0.00	88.00	5.30	3.55	0.00				
38.00	5.30	3.55	0.00	89.00	5.30	3.55	0.00				
39.00	5.30	3.55	0.00	90.00	5.30	3.55	0.00				
40.00	5.30	3.55	0.00	91.00	5.30	3.55	0.00				
41.00	5.30	3.55	0.00	92.00	5.30	3.55	0.00				
42.00	5.30	3.55	0.00	93.00	5.30	3.55	0.00				
43.00	5.30	3.55	0.00	94.00	5.30	3.55	0.00				
44.00	5.30	3.55	0.00	95.00	5.30	3.55	0.00				
45.00	5.30	3.55	0.00	96.00	5.30	3.55	0.00				
46.00	5.30	3.55	0.00	97.00	5.30	3.55	0.00				
47.00	5.30	3.55	0.00	98.00	5.30	3.55	0.00				
48.00	5.30	3.55	0.00	99.00	5.30	3.55	0.00				
49.00	5.30	3.55	0.00	100.00	5.30	3.55	0.00				
50.00	5.30	3.55	0.00	101.00	5.30	3.55	0.00				
51.00	5.30	3.55	0.00	102.00	5.30	3.55	0.00				

Summary for Subcatchment 1b: DA-1b

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

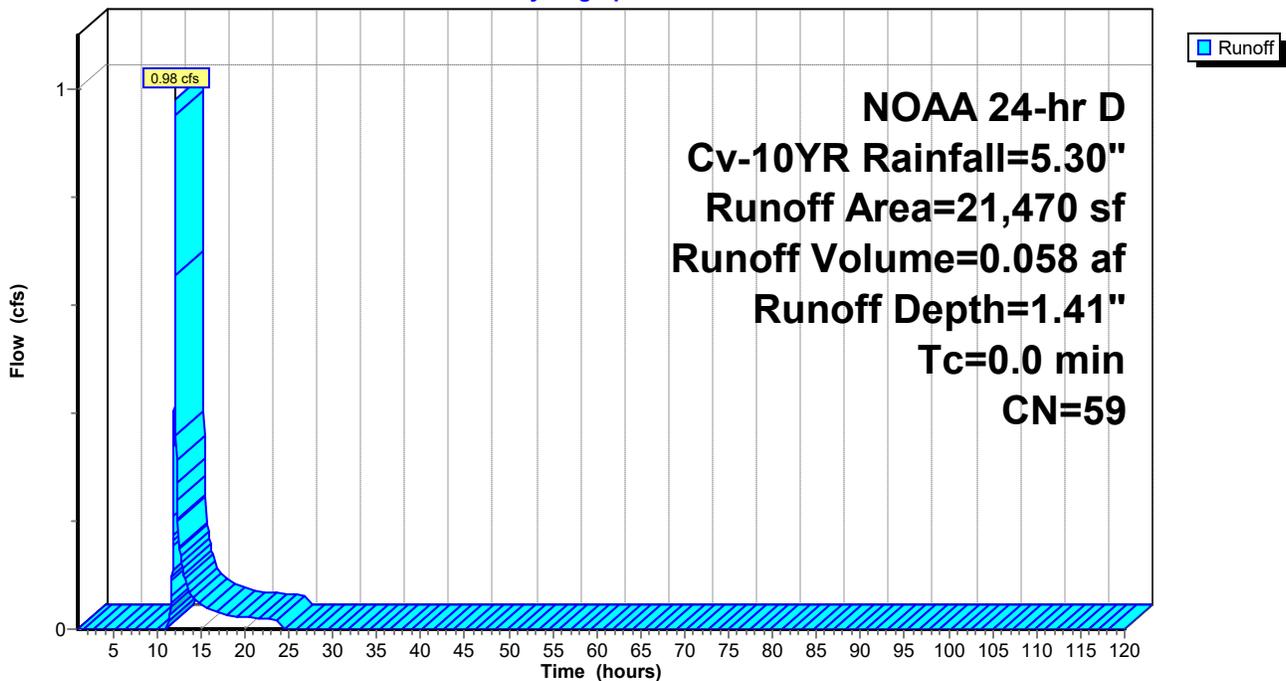
Runoff = 0.98 cfs @ 12.09 hrs, Volume= 0.058 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
20,717	58	Woods/grass comb., Good, HSG B
753	98	Roofs, HSG B
21,470	59	Weighted Average
20,717		96.49% Pervious Area
753		3.51% Impervious Area

Subcatchment 1b: DA-1b

Hydrograph



Hydrograph for Subcatchment 1b: DA-1b

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	1.41	0.00	103.00	5.30	1.41	0.00
2.00	0.13	0.00	0.00	53.00	5.30	1.41	0.00	104.00	5.30	1.41	0.00
3.00	0.20	0.00	0.00	54.00	5.30	1.41	0.00	105.00	5.30	1.41	0.00
4.00	0.28	0.00	0.00	55.00	5.30	1.41	0.00	106.00	5.30	1.41	0.00
5.00	0.36	0.00	0.00	56.00	5.30	1.41	0.00	107.00	5.30	1.41	0.00
6.00	0.45	0.00	0.00	57.00	5.30	1.41	0.00	108.00	5.30	1.41	0.00
7.00	0.56	0.00	0.00	58.00	5.30	1.41	0.00	109.00	5.30	1.41	0.00
8.00	0.69	0.00	0.00	59.00	5.30	1.41	0.00	110.00	5.30	1.41	0.00
9.00	0.84	0.00	0.00	60.00	5.30	1.41	0.00	111.00	5.30	1.41	0.00
10.00	1.05	0.00	0.00	61.00	5.30	1.41	0.00	112.00	5.30	1.41	0.00
11.00	1.38	0.00	0.00	62.00	5.30	1.41	0.00	113.00	5.30	1.41	0.00
12.00	2.54	0.16	0.58	63.00	5.30	1.41	0.00	114.00	5.30	1.41	0.00
13.00	3.92	0.68	0.11	64.00	5.30	1.41	0.00	115.00	5.30	1.41	0.00
14.00	4.25	0.83	0.06	65.00	5.30	1.41	0.00	116.00	5.30	1.41	0.00
15.00	4.46	0.94	0.04	66.00	5.30	1.41	0.00	117.00	5.30	1.41	0.00
16.00	4.61	1.02	0.04	67.00	5.30	1.41	0.00	118.00	5.30	1.41	0.00
17.00	4.74	1.09	0.03	68.00	5.30	1.41	0.00	119.00	5.30	1.41	0.00
18.00	4.85	1.15	0.03	69.00	5.30	1.41	0.00	120.00	5.30	1.41	0.00
19.00	4.94	1.20	0.02	70.00	5.30	1.41	0.00				
20.00	5.02	1.25	0.02	71.00	5.30	1.41	0.00				
21.00	5.10	1.29	0.02	72.00	5.30	1.41	0.00				
22.00	5.17	1.33	0.02	73.00	5.30	1.41	0.00				
23.00	5.24	1.37	0.02	74.00	5.30	1.41	0.00				
24.00	5.30	1.41	0.01	75.00	5.30	1.41	0.00				
25.00	5.30	1.41	0.00	76.00	5.30	1.41	0.00				
26.00	5.30	1.41	0.00	77.00	5.30	1.41	0.00				
27.00	5.30	1.41	0.00	78.00	5.30	1.41	0.00				
28.00	5.30	1.41	0.00	79.00	5.30	1.41	0.00				
29.00	5.30	1.41	0.00	80.00	5.30	1.41	0.00				
30.00	5.30	1.41	0.00	81.00	5.30	1.41	0.00				
31.00	5.30	1.41	0.00	82.00	5.30	1.41	0.00				
32.00	5.30	1.41	0.00	83.00	5.30	1.41	0.00				
33.00	5.30	1.41	0.00	84.00	5.30	1.41	0.00				
34.00	5.30	1.41	0.00	85.00	5.30	1.41	0.00				
35.00	5.30	1.41	0.00	86.00	5.30	1.41	0.00				
36.00	5.30	1.41	0.00	87.00	5.30	1.41	0.00				
37.00	5.30	1.41	0.00	88.00	5.30	1.41	0.00				
38.00	5.30	1.41	0.00	89.00	5.30	1.41	0.00				
39.00	5.30	1.41	0.00	90.00	5.30	1.41	0.00				
40.00	5.30	1.41	0.00	91.00	5.30	1.41	0.00				
41.00	5.30	1.41	0.00	92.00	5.30	1.41	0.00				
42.00	5.30	1.41	0.00	93.00	5.30	1.41	0.00				
43.00	5.30	1.41	0.00	94.00	5.30	1.41	0.00				
44.00	5.30	1.41	0.00	95.00	5.30	1.41	0.00				
45.00	5.30	1.41	0.00	96.00	5.30	1.41	0.00				
46.00	5.30	1.41	0.00	97.00	5.30	1.41	0.00				
47.00	5.30	1.41	0.00	98.00	5.30	1.41	0.00				
48.00	5.30	1.41	0.00	99.00	5.30	1.41	0.00				
49.00	5.30	1.41	0.00	100.00	5.30	1.41	0.00				
50.00	5.30	1.41	0.00	101.00	5.30	1.41	0.00				
51.00	5.30	1.41	0.00	102.00	5.30	1.41	0.00				

Summary for Subcatchment 1c: PDA-1c

Runoff = 3.48 cfs @ 12.96 hrs, Volume= 1.179 af, Depth= 2.18"

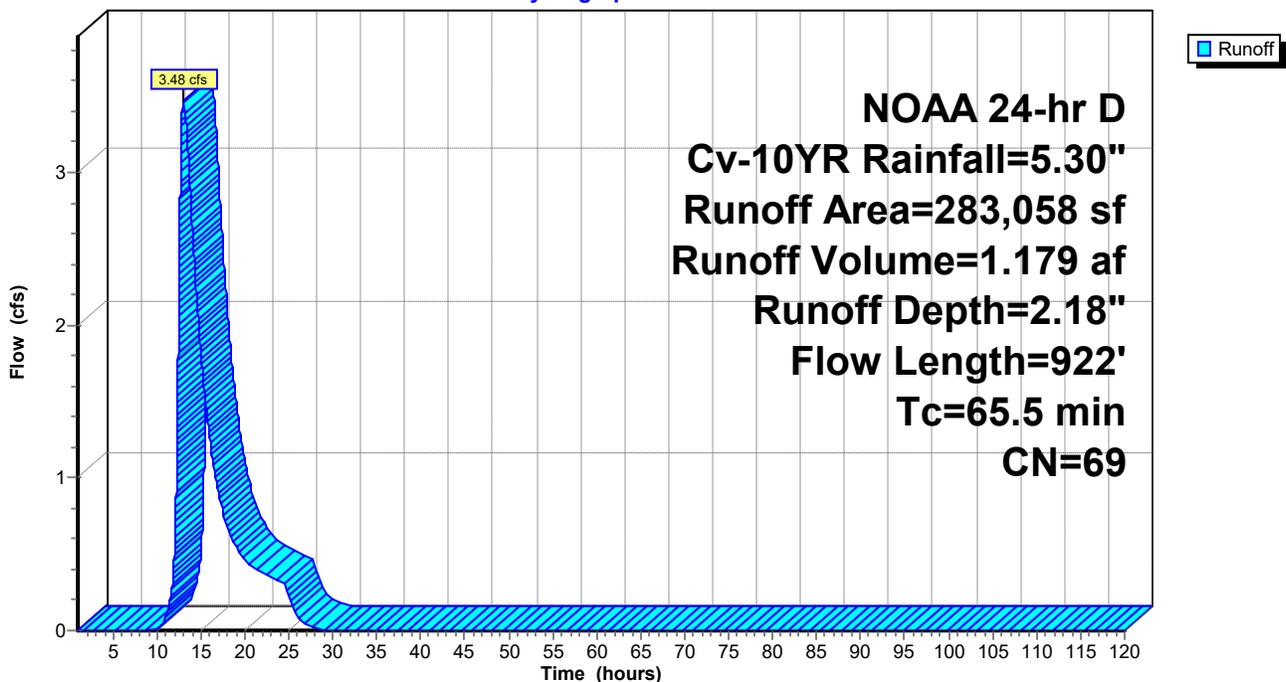
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span=1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
163,181	48	Brush, Good, HSG B
96,607	98	Roofs, HSG B
* 21,670	98	filtration Pad
* 1,600	98	leachate pad
283,058	69	Weighted Average
163,181		57.65% Pervious Area
119,877		42.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0100	0.09		Sheet Flow, SF from berm/Landscape buffer Grass: Dense n= 0.240 P2= 3.40"
1.6	125	0.0080	1.34		Shallow Concentrated Flow, SCF-through grass/Native Perennials Grassed Waterway Kv= 15.0 fps
45.6	697	0.0050	0.25	3.44	Channel Flow, OCF Trap Swale Area= 13.5 sf Perim= 40.0' r= 0.34' n= 0.200
65.5	922	Total			

Subcatchment 1c: PDA-1c

Hydrograph



Hydrograph for Subcatchment 1c: PDA-1c

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	2.18	0.00	103.00	5.30	2.18	0.00
2.00	0.13	0.00	0.00	53.00	5.30	2.18	0.00	104.00	5.30	2.18	0.00
3.00	0.20	0.00	0.00	54.00	5.30	2.18	0.00	105.00	5.30	2.18	0.00
4.00	0.28	0.00	0.00	55.00	5.30	2.18	0.00	106.00	5.30	2.18	0.00
5.00	0.36	0.00	0.00	56.00	5.30	2.18	0.00	107.00	5.30	2.18	0.00
6.00	0.45	0.00	0.00	57.00	5.30	2.18	0.00	108.00	5.30	2.18	0.00
7.00	0.56	0.00	0.00	58.00	5.30	2.18	0.00	109.00	5.30	2.18	0.00
8.00	0.69	0.00	0.00	59.00	5.30	2.18	0.00	110.00	5.30	2.18	0.00
9.00	0.84	0.00	0.00	60.00	5.30	2.18	0.00	111.00	5.30	2.18	0.00
10.00	1.05	0.00	0.00	61.00	5.30	2.18	0.00	112.00	5.30	2.18	0.00
11.00	1.38	0.05	0.08	62.00	5.30	2.18	0.00	113.00	5.30	2.18	0.00
12.00	2.54	0.44	0.51	63.00	5.30	2.18	0.00	114.00	5.30	2.18	0.00
13.00	3.92	1.22	3.47	64.00	5.30	2.18	0.00	115.00	5.30	2.18	0.00
14.00	4.25	1.43	2.68	65.00	5.30	2.18	0.00	116.00	5.30	2.18	0.00
15.00	4.46	1.57	1.83	66.00	5.30	2.18	0.00	117.00	5.30	2.18	0.00
16.00	4.61	1.68	1.26	67.00	5.30	2.18	0.00	118.00	5.30	2.18	0.00
17.00	4.74	1.77	0.89	68.00	5.30	2.18	0.00	119.00	5.30	2.18	0.00
18.00	4.85	1.85	0.68	69.00	5.30	2.18	0.00	120.00	5.30	2.18	0.00
19.00	4.94	1.91	0.55	70.00	5.30	2.18	0.00				
20.00	5.02	1.97	0.46	71.00	5.30	2.18	0.00				
21.00	5.10	2.03	0.42	72.00	5.30	2.18	0.00				
22.00	5.17	2.08	0.38	73.00	5.30	2.18	0.00				
23.00	5.24	2.13	0.35	74.00	5.30	2.18	0.00				
24.00	5.30	2.18	0.33	75.00	5.30	2.18	0.00				
25.00	5.30	2.18	0.21	76.00	5.30	2.18	0.00				
26.00	5.30	2.18	0.09	77.00	5.30	2.18	0.00				
27.00	5.30	2.18	0.04	78.00	5.30	2.18	0.00				
28.00	5.30	2.18	0.01	79.00	5.30	2.18	0.00				
29.00	5.30	2.18	0.00	80.00	5.30	2.18	0.00				
30.00	5.30	2.18	0.00	81.00	5.30	2.18	0.00				
31.00	5.30	2.18	0.00	82.00	5.30	2.18	0.00				
32.00	5.30	2.18	0.00	83.00	5.30	2.18	0.00				
33.00	5.30	2.18	0.00	84.00	5.30	2.18	0.00				
34.00	5.30	2.18	0.00	85.00	5.30	2.18	0.00				
35.00	5.30	2.18	0.00	86.00	5.30	2.18	0.00				
36.00	5.30	2.18	0.00	87.00	5.30	2.18	0.00				
37.00	5.30	2.18	0.00	88.00	5.30	2.18	0.00				
38.00	5.30	2.18	0.00	89.00	5.30	2.18	0.00				
39.00	5.30	2.18	0.00	90.00	5.30	2.18	0.00				
40.00	5.30	2.18	0.00	91.00	5.30	2.18	0.00				
41.00	5.30	2.18	0.00	92.00	5.30	2.18	0.00				
42.00	5.30	2.18	0.00	93.00	5.30	2.18	0.00				
43.00	5.30	2.18	0.00	94.00	5.30	2.18	0.00				
44.00	5.30	2.18	0.00	95.00	5.30	2.18	0.00				
45.00	5.30	2.18	0.00	96.00	5.30	2.18	0.00				
46.00	5.30	2.18	0.00	97.00	5.30	2.18	0.00				
47.00	5.30	2.18	0.00	98.00	5.30	2.18	0.00				
48.00	5.30	2.18	0.00	99.00	5.30	2.18	0.00				
49.00	5.30	2.18	0.00	100.00	5.30	2.18	0.00				
50.00	5.30	2.18	0.00	101.00	5.30	2.18	0.00				
51.00	5.30	2.18	0.00	102.00	5.30	2.18	0.00				

Summary for Subcatchment DA-2: DA-2 Pre-Dev

Initial Mannings on trap swale set at 0.15 pending depth assessment

Runoff = 3.20 cfs @ 12.54 hrs, Volume= 0.730 af, Depth= 1.86"

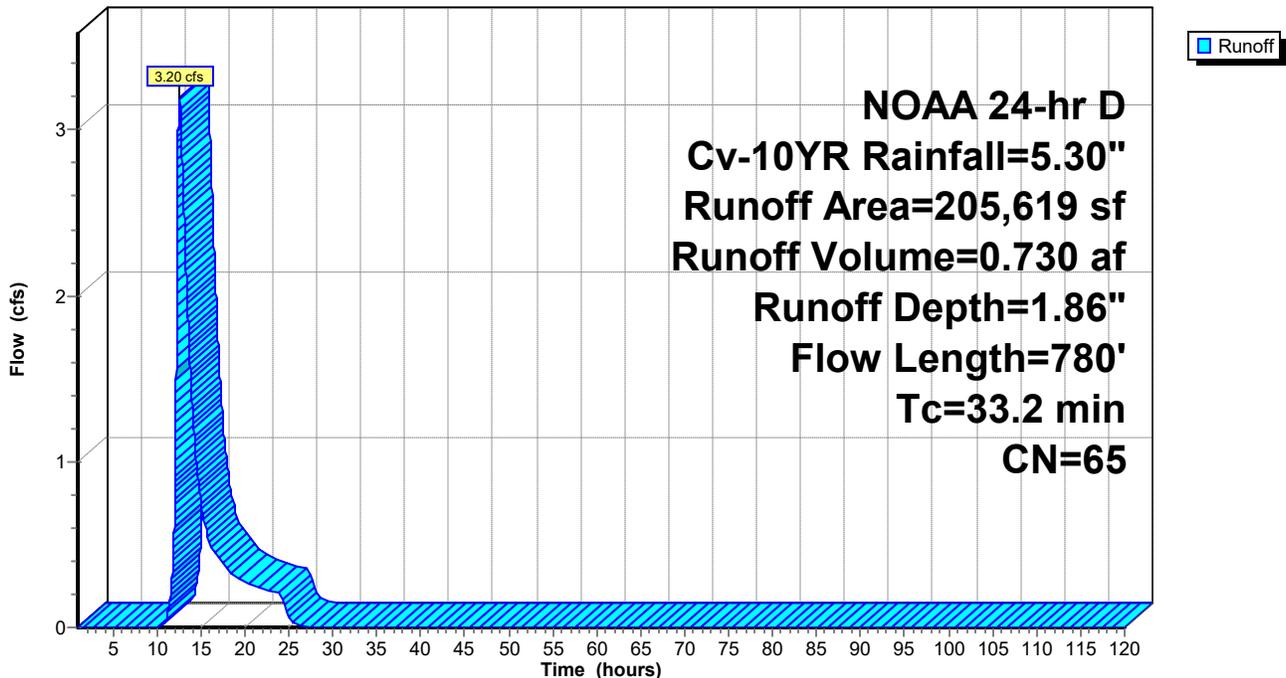
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
181,287	61	>75% Grass cover, Good, HSG B
6,845	98	Paved parking, HSG B
17,487	96	Gravel surface, HSG B
205,619	65	Weighted Average
198,774		96.67% Pervious Area
6,845		3.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	100	0.0025	0.08		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.40"
11.4	680	0.0200	0.99		Shallow Concentrated Flow, SCF-pad shoulder Short Grass Pasture Kv= 7.0 fps
33.2	780	Total			

Subcatchment DA-2: DA-2 Pre-Dev

Hydrograph



Hydrograph for Subcatchment DA-2: DA-2 Pre-Dev

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	1.86	0.00	103.00	5.30	1.86	0.00
2.00	0.13	0.00	0.00	53.00	5.30	1.86	0.00	104.00	5.30	1.86	0.00
3.00	0.20	0.00	0.00	54.00	5.30	1.86	0.00	105.00	5.30	1.86	0.00
4.00	0.28	0.00	0.00	55.00	5.30	1.86	0.00	106.00	5.30	1.86	0.00
5.00	0.36	0.00	0.00	56.00	5.30	1.86	0.00	107.00	5.30	1.86	0.00
6.00	0.45	0.00	0.00	57.00	5.30	1.86	0.00	108.00	5.30	1.86	0.00
7.00	0.56	0.00	0.00	58.00	5.30	1.86	0.00	109.00	5.30	1.86	0.00
8.00	0.69	0.00	0.00	59.00	5.30	1.86	0.00	110.00	5.30	1.86	0.00
9.00	0.84	0.00	0.00	60.00	5.30	1.86	0.00	111.00	5.30	1.86	0.00
10.00	1.05	0.00	0.00	61.00	5.30	1.86	0.00	112.00	5.30	1.86	0.00
11.00	1.38	0.02	0.04	62.00	5.30	1.86	0.00	113.00	5.30	1.86	0.00
12.00	2.54	0.31	0.64	63.00	5.30	1.86	0.00	114.00	5.30	1.86	0.00
13.00	3.92	0.98	2.63	64.00	5.30	1.86	0.00	115.00	5.30	1.86	0.00
14.00	4.25	1.18	1.36	65.00	5.30	1.86	0.00	116.00	5.30	1.86	0.00
15.00	4.46	1.30	0.76	66.00	5.30	1.86	0.00	117.00	5.30	1.86	0.00
16.00	4.61	1.40	0.52	67.00	5.30	1.86	0.00	118.00	5.30	1.86	0.00
17.00	4.74	1.48	0.42	68.00	5.30	1.86	0.00	119.00	5.30	1.86	0.00
18.00	4.85	1.55	0.35	69.00	5.30	1.86	0.00	120.00	5.30	1.86	0.00
19.00	4.94	1.61	0.30	70.00	5.30	1.86	0.00				
20.00	5.02	1.67	0.27	71.00	5.30	1.86	0.00				
21.00	5.10	1.72	0.26	72.00	5.30	1.86	0.00				
22.00	5.17	1.77	0.24	73.00	5.30	1.86	0.00				
23.00	5.24	1.81	0.22	74.00	5.30	1.86	0.00				
24.00	5.30	1.86	0.20	75.00	5.30	1.86	0.00				
25.00	5.30	1.86	0.06	76.00	5.30	1.86	0.00				
26.00	5.30	1.86	0.01	77.00	5.30	1.86	0.00				
27.00	5.30	1.86	0.00	78.00	5.30	1.86	0.00				
28.00	5.30	1.86	0.00	79.00	5.30	1.86	0.00				
29.00	5.30	1.86	0.00	80.00	5.30	1.86	0.00				
30.00	5.30	1.86	0.00	81.00	5.30	1.86	0.00				
31.00	5.30	1.86	0.00	82.00	5.30	1.86	0.00				
32.00	5.30	1.86	0.00	83.00	5.30	1.86	0.00				
33.00	5.30	1.86	0.00	84.00	5.30	1.86	0.00				
34.00	5.30	1.86	0.00	85.00	5.30	1.86	0.00				
35.00	5.30	1.86	0.00	86.00	5.30	1.86	0.00				
36.00	5.30	1.86	0.00	87.00	5.30	1.86	0.00				
37.00	5.30	1.86	0.00	88.00	5.30	1.86	0.00				
38.00	5.30	1.86	0.00	89.00	5.30	1.86	0.00				
39.00	5.30	1.86	0.00	90.00	5.30	1.86	0.00				
40.00	5.30	1.86	0.00	91.00	5.30	1.86	0.00				
41.00	5.30	1.86	0.00	92.00	5.30	1.86	0.00				
42.00	5.30	1.86	0.00	93.00	5.30	1.86	0.00				
43.00	5.30	1.86	0.00	94.00	5.30	1.86	0.00				
44.00	5.30	1.86	0.00	95.00	5.30	1.86	0.00				
45.00	5.30	1.86	0.00	96.00	5.30	1.86	0.00				
46.00	5.30	1.86	0.00	97.00	5.30	1.86	0.00				
47.00	5.30	1.86	0.00	98.00	5.30	1.86	0.00				
48.00	5.30	1.86	0.00	99.00	5.30	1.86	0.00				
49.00	5.30	1.86	0.00	100.00	5.30	1.86	0.00				
50.00	5.30	1.86	0.00	101.00	5.30	1.86	0.00				
51.00	5.30	1.86	0.00	102.00	5.30	1.86	0.00				

Summary for Subcatchment PDA-1b: PDA-1b

Runoff = 0.25 cfs @ 12.58 hrs, Volume= 0.062 af, Depth= 1.41"

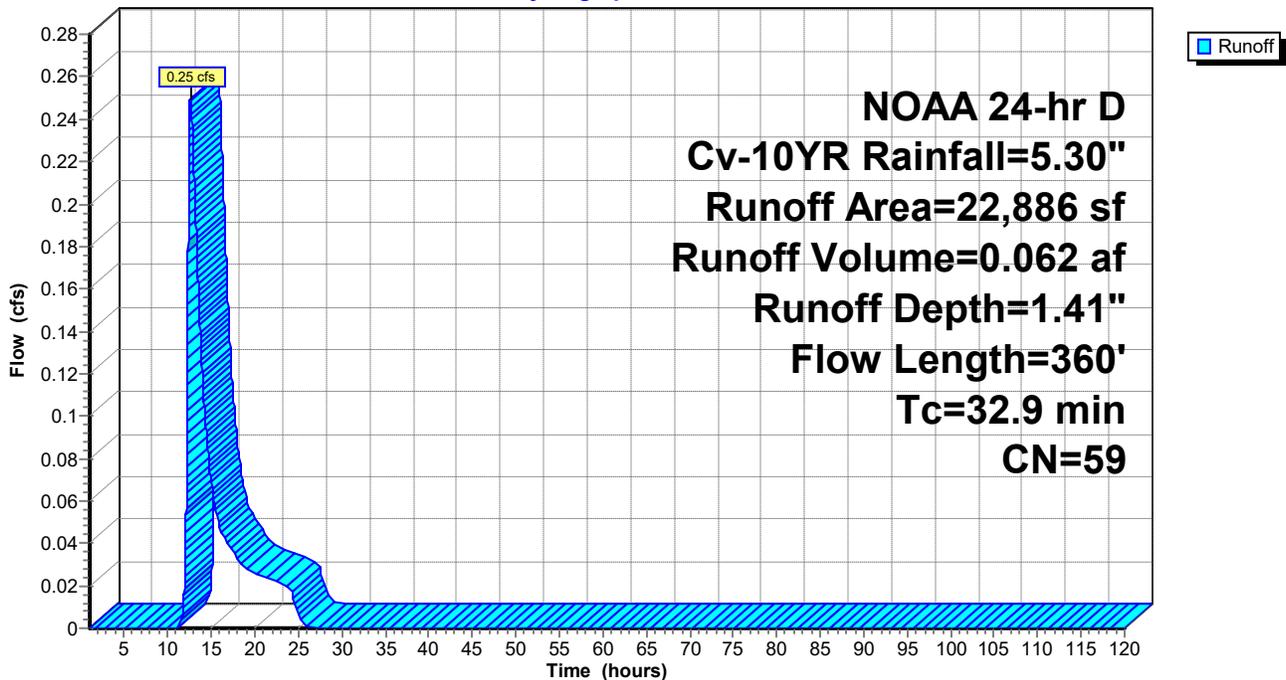
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span=1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
22,133	58	Woods/grass comb., Good, HSG B
753	98	Roofs, HSG B
22,886	59	Weighted Average
22,133		96.71% Pervious Area
753		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.6	100	0.0030	0.06		Sheet Flow, newly graded grass SF Grass: Dense n= 0.240 P2= 3.40"
0.2	15	0.0470	1.52		Shallow Concentrated Flow, SCF- pass MW Short Grass Pasture Kv= 7.0 fps
3.1	245	0.0050	1.32	9.24	Channel Flow, OCF-Regraded Trap Swale Area= 7.0 sf Perim= 24.0' r= 0.29' n= 0.035 Earth, dense weeds
32.9	360	Total			

Subcatchment PDA-1b: PDA-1b

Hydrograph



Hydrograph for Subcatchment PDA-1b: PDA-1b

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	1.41	0.00	103.00	5.30	1.41	0.00
2.00	0.13	0.00	0.00	53.00	5.30	1.41	0.00	104.00	5.30	1.41	0.00
3.00	0.20	0.00	0.00	54.00	5.30	1.41	0.00	105.00	5.30	1.41	0.00
4.00	0.28	0.00	0.00	55.00	5.30	1.41	0.00	106.00	5.30	1.41	0.00
5.00	0.36	0.00	0.00	56.00	5.30	1.41	0.00	107.00	5.30	1.41	0.00
6.00	0.45	0.00	0.00	57.00	5.30	1.41	0.00	108.00	5.30	1.41	0.00
7.00	0.56	0.00	0.00	58.00	5.30	1.41	0.00	109.00	5.30	1.41	0.00
8.00	0.69	0.00	0.00	59.00	5.30	1.41	0.00	110.00	5.30	1.41	0.00
9.00	0.84	0.00	0.00	60.00	5.30	1.41	0.00	111.00	5.30	1.41	0.00
10.00	1.05	0.00	0.00	61.00	5.30	1.41	0.00	112.00	5.30	1.41	0.00
11.00	1.38	0.00	0.00	62.00	5.30	1.41	0.00	113.00	5.30	1.41	0.00
12.00	2.54	0.16	0.03	63.00	5.30	1.41	0.00	114.00	5.30	1.41	0.00
13.00	3.92	0.68	0.22	64.00	5.30	1.41	0.00	115.00	5.30	1.41	0.00
14.00	4.25	0.83	0.12	65.00	5.30	1.41	0.00	116.00	5.30	1.41	0.00
15.00	4.46	0.94	0.07	66.00	5.30	1.41	0.00	117.00	5.30	1.41	0.00
16.00	4.61	1.02	0.05	67.00	5.30	1.41	0.00	118.00	5.30	1.41	0.00
17.00	4.74	1.09	0.04	68.00	5.30	1.41	0.00	119.00	5.30	1.41	0.00
18.00	4.85	1.15	0.03	69.00	5.30	1.41	0.00	120.00	5.30	1.41	0.00
19.00	4.94	1.20	0.03	70.00	5.30	1.41	0.00				
20.00	5.02	1.25	0.03	71.00	5.30	1.41	0.00				
21.00	5.10	1.29	0.02	72.00	5.30	1.41	0.00				
22.00	5.17	1.33	0.02	73.00	5.30	1.41	0.00				
23.00	5.24	1.37	0.02	74.00	5.30	1.41	0.00				
24.00	5.30	1.41	0.02	75.00	5.30	1.41	0.00				
25.00	5.30	1.41	0.01	76.00	5.30	1.41	0.00				
26.00	5.30	1.41	0.00	77.00	5.30	1.41	0.00				
27.00	5.30	1.41	0.00	78.00	5.30	1.41	0.00				
28.00	5.30	1.41	0.00	79.00	5.30	1.41	0.00				
29.00	5.30	1.41	0.00	80.00	5.30	1.41	0.00				
30.00	5.30	1.41	0.00	81.00	5.30	1.41	0.00				
31.00	5.30	1.41	0.00	82.00	5.30	1.41	0.00				
32.00	5.30	1.41	0.00	83.00	5.30	1.41	0.00				
33.00	5.30	1.41	0.00	84.00	5.30	1.41	0.00				
34.00	5.30	1.41	0.00	85.00	5.30	1.41	0.00				
35.00	5.30	1.41	0.00	86.00	5.30	1.41	0.00				
36.00	5.30	1.41	0.00	87.00	5.30	1.41	0.00				
37.00	5.30	1.41	0.00	88.00	5.30	1.41	0.00				
38.00	5.30	1.41	0.00	89.00	5.30	1.41	0.00				
39.00	5.30	1.41	0.00	90.00	5.30	1.41	0.00				
40.00	5.30	1.41	0.00	91.00	5.30	1.41	0.00				
41.00	5.30	1.41	0.00	92.00	5.30	1.41	0.00				
42.00	5.30	1.41	0.00	93.00	5.30	1.41	0.00				
43.00	5.30	1.41	0.00	94.00	5.30	1.41	0.00				
44.00	5.30	1.41	0.00	95.00	5.30	1.41	0.00				
45.00	5.30	1.41	0.00	96.00	5.30	1.41	0.00				
46.00	5.30	1.41	0.00	97.00	5.30	1.41	0.00				
47.00	5.30	1.41	0.00	98.00	5.30	1.41	0.00				
48.00	5.30	1.41	0.00	99.00	5.30	1.41	0.00				
49.00	5.30	1.41	0.00	100.00	5.30	1.41	0.00				
50.00	5.30	1.41	0.00	101.00	5.30	1.41	0.00				
51.00	5.30	1.41	0.00	102.00	5.30	1.41	0.00				

Summary for Subcatchment PDA-1c: PDA-1c

Runoff = 2.78 cfs @ 13.08 hrs, Volume= 1.008 af, Depth= 2.01"

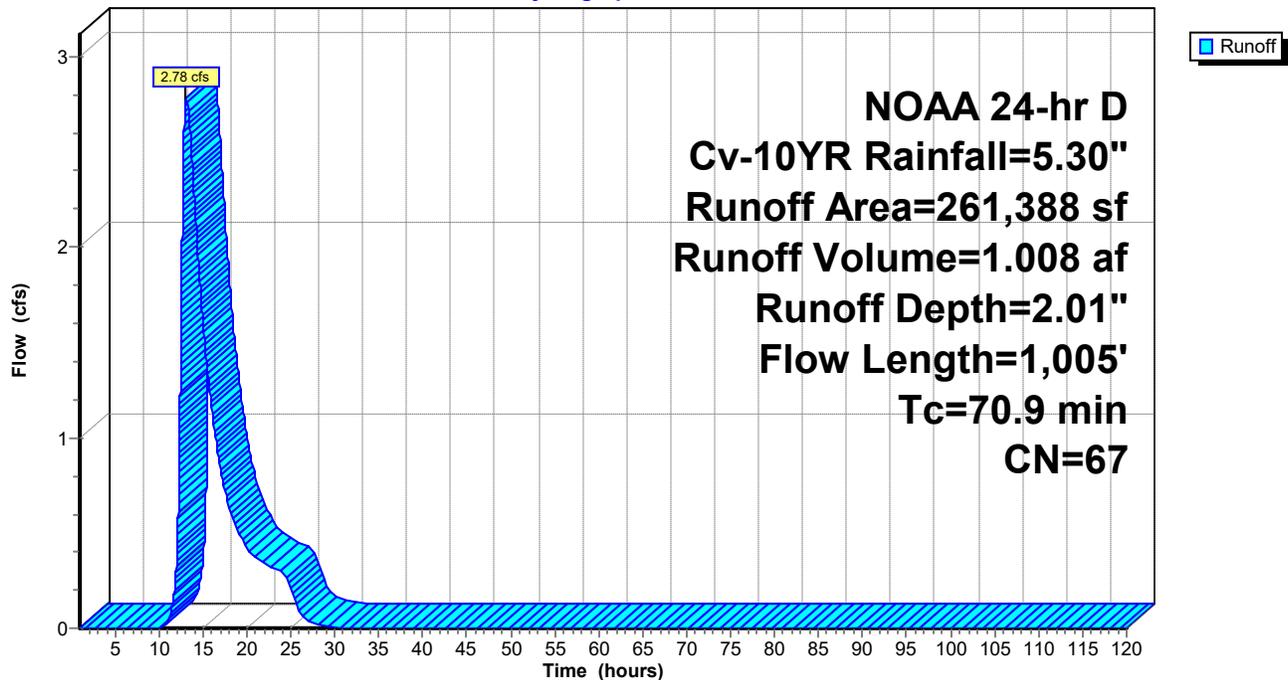
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
163,181	48	Brush, Good, HSG B
96,607	98	Roofs, HSG B
* 1,600	98	leachate tank pad
261,388	67	Weighted Average
163,181		62.43% Pervious Area
98,207		37.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0100	0.09		Sheet Flow, SF from berm/Landscape buffer Grass: Dense n= 0.240 P2= 3.40"
1.6	125	0.0080	1.34		Shallow Concentrated Flow, SCF-through grass/Native Perennials Grassed Waterway Kv= 15.0 fps
51.0	780	0.0050	0.25	3.44	Channel Flow, OCF Trap Swale Area= 13.5 sf Perim= 40.0' r= 0.34' n= 0.200
70.9	1,005	Total			

Subcatchment PDA-1c: PDA-1c

Hydrograph



Hydrograph for Subcatchment PDA-1c: PDA-1c

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	2.01	0.00	103.00	5.30	2.01	0.00
2.00	0.13	0.00	0.00	53.00	5.30	2.01	0.00	104.00	5.30	2.01	0.00
3.00	0.20	0.00	0.00	54.00	5.30	2.01	0.00	105.00	5.30	2.01	0.00
4.00	0.28	0.00	0.00	55.00	5.30	2.01	0.00	106.00	5.30	2.01	0.00
5.00	0.36	0.00	0.00	56.00	5.30	2.01	0.00	107.00	5.30	2.01	0.00
6.00	0.45	0.00	0.00	57.00	5.30	2.01	0.00	108.00	5.30	2.01	0.00
7.00	0.56	0.00	0.00	58.00	5.30	2.01	0.00	109.00	5.30	2.01	0.00
8.00	0.69	0.00	0.00	59.00	5.30	2.01	0.00	110.00	5.30	2.01	0.00
9.00	0.84	0.00	0.00	60.00	5.30	2.01	0.00	111.00	5.30	2.01	0.00
10.00	1.05	0.00	0.00	61.00	5.30	2.01	0.00	112.00	5.30	2.01	0.00
11.00	1.38	0.03	0.03	62.00	5.30	2.01	0.00	113.00	5.30	2.01	0.00
12.00	2.54	0.37	0.33	63.00	5.30	2.01	0.00	114.00	5.30	2.01	0.00
13.00	3.92	1.10	2.74	64.00	5.30	2.01	0.00	115.00	5.30	2.01	0.00
14.00	4.25	1.30	2.28	65.00	5.30	2.01	0.00	116.00	5.30	2.01	0.00
15.00	4.46	1.44	1.62	66.00	5.30	2.01	0.00	117.00	5.30	2.01	0.00
16.00	4.61	1.54	1.15	67.00	5.30	2.01	0.00	118.00	5.30	2.01	0.00
17.00	4.74	1.63	0.84	68.00	5.30	2.01	0.00	119.00	5.30	2.01	0.00
18.00	4.85	1.70	0.63	69.00	5.30	2.01	0.00	120.00	5.30	2.01	0.00
19.00	4.94	1.76	0.50	70.00	5.30	2.01	0.00				
20.00	5.02	1.82	0.42	71.00	5.30	2.01	0.00				
21.00	5.10	1.87	0.37	72.00	5.30	2.01	0.00				
22.00	5.17	1.92	0.34	73.00	5.30	2.01	0.00				
23.00	5.24	1.97	0.32	74.00	5.30	2.01	0.00				
24.00	5.30	2.01	0.29	75.00	5.30	2.01	0.00				
25.00	5.30	2.01	0.20	76.00	5.30	2.01	0.00				
26.00	5.30	2.01	0.09	77.00	5.30	2.01	0.00				
27.00	5.30	2.01	0.04	78.00	5.30	2.01	0.00				
28.00	5.30	2.01	0.02	79.00	5.30	2.01	0.00				
29.00	5.30	2.01	0.01	80.00	5.30	2.01	0.00				
30.00	5.30	2.01	0.00	81.00	5.30	2.01	0.00				
31.00	5.30	2.01	0.00	82.00	5.30	2.01	0.00				
32.00	5.30	2.01	0.00	83.00	5.30	2.01	0.00				
33.00	5.30	2.01	0.00	84.00	5.30	2.01	0.00				
34.00	5.30	2.01	0.00	85.00	5.30	2.01	0.00				
35.00	5.30	2.01	0.00	86.00	5.30	2.01	0.00				
36.00	5.30	2.01	0.00	87.00	5.30	2.01	0.00				
37.00	5.30	2.01	0.00	88.00	5.30	2.01	0.00				
38.00	5.30	2.01	0.00	89.00	5.30	2.01	0.00				
39.00	5.30	2.01	0.00	90.00	5.30	2.01	0.00				
40.00	5.30	2.01	0.00	91.00	5.30	2.01	0.00				
41.00	5.30	2.01	0.00	92.00	5.30	2.01	0.00				
42.00	5.30	2.01	0.00	93.00	5.30	2.01	0.00				
43.00	5.30	2.01	0.00	94.00	5.30	2.01	0.00				
44.00	5.30	2.01	0.00	95.00	5.30	2.01	0.00				
45.00	5.30	2.01	0.00	96.00	5.30	2.01	0.00				
46.00	5.30	2.01	0.00	97.00	5.30	2.01	0.00				
47.00	5.30	2.01	0.00	98.00	5.30	2.01	0.00				
48.00	5.30	2.01	0.00	99.00	5.30	2.01	0.00				
49.00	5.30	2.01	0.00	100.00	5.30	2.01	0.00				
50.00	5.30	2.01	0.00	101.00	5.30	2.01	0.00				
51.00	5.30	2.01	0.00	102.00	5.30	2.01	0.00				

Summary for Subcatchment PDA-2: PDA-2

Initial Mannings on trap swale set at 0.15 pending depth assessment

Runoff = 3.27 cfs @ 12.92 hrs, Volume= 1.065 af, Depth= 2.69"

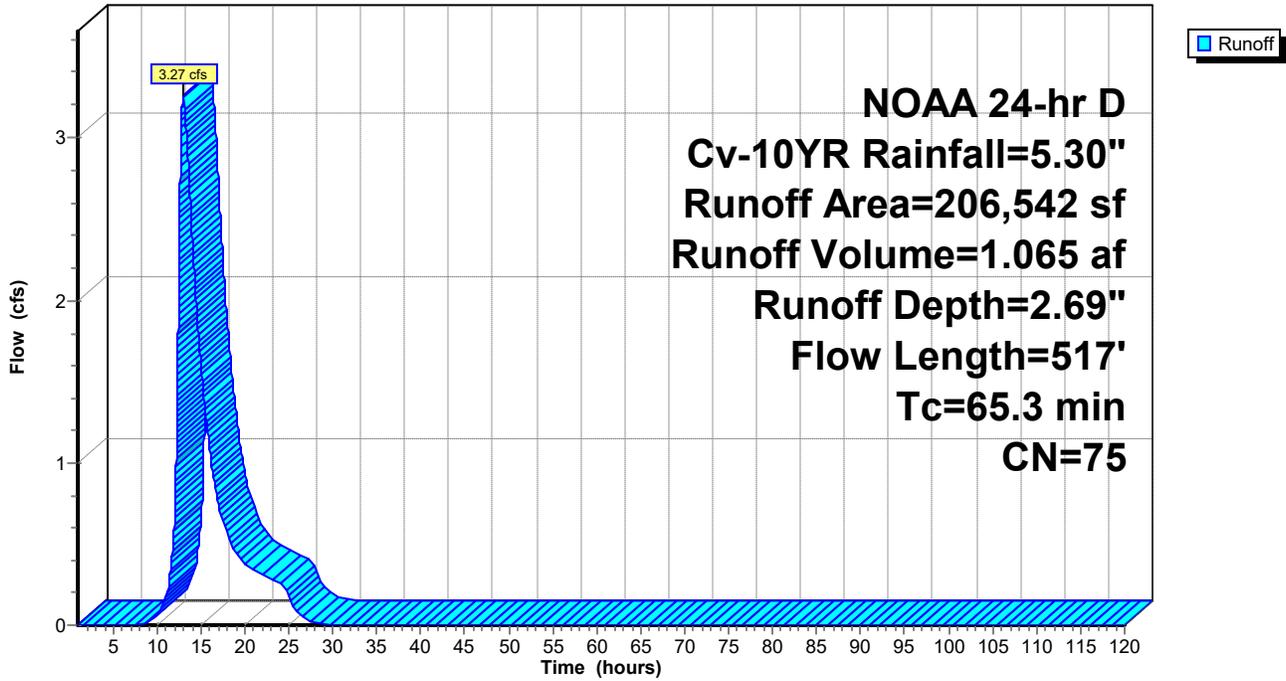
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Cv-10YR Rainfall=5.30"

Area (sf)	CN	Description
126,842	61	>75% Grass cover, Good, HSG B
52,641	98	Paved parking, HSG B
27,059	98	Roofs, HSG B
206,542	75	Weighted Average
126,842		61.41% Pervious Area
79,700		38.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.1	100	0.0050	0.07		Sheet Flow, sheet flow Grass: Dense n= 0.240 P2= 3.40"
0.2	22	0.0450	1.48		Shallow Concentrated Flow, SCF-pad shoulder Short Grass Pasture Kv= 7.0 fps
41.0	395	0.0040	0.16	1.61	Channel Flow, OCF-Trap Channel Area= 10.0 sf Perim= 50.0' r= 0.20' n= 0.200
65.3	517	Total			

Subcatchment PDA-2: PDA-2

Hydrograph



Hydrograph for Subcatchment PDA-2: PDA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.06	0.00	0.00	52.00	5.30	2.69	0.00	103.00	5.30	2.69	0.00
2.00	0.13	0.00	0.00	53.00	5.30	2.69	0.00	104.00	5.30	2.69	0.00
3.00	0.20	0.00	0.00	54.00	5.30	2.69	0.00	105.00	5.30	2.69	0.00
4.00	0.28	0.00	0.00	55.00	5.30	2.69	0.00	106.00	5.30	2.69	0.00
5.00	0.36	0.00	0.00	56.00	5.30	2.69	0.00	107.00	5.30	2.69	0.00
6.00	0.45	0.00	0.00	57.00	5.30	2.69	0.00	108.00	5.30	2.69	0.00
7.00	0.56	0.00	0.00	58.00	5.30	2.69	0.00	109.00	5.30	2.69	0.00
8.00	0.69	0.00	0.00	59.00	5.30	2.69	0.00	110.00	5.30	2.69	0.00
9.00	0.84	0.01	0.01	60.00	5.30	2.69	0.00	111.00	5.30	2.69	0.00
10.00	1.05	0.04	0.06	61.00	5.30	2.69	0.00	112.00	5.30	2.69	0.00
11.00	1.38	0.13	0.17	62.00	5.30	2.69	0.00	113.00	5.30	2.69	0.00
12.00	2.54	0.67	0.63	63.00	5.30	2.69	0.00	114.00	5.30	2.69	0.00
13.00	3.92	1.61	3.26	64.00	5.30	2.69	0.00	115.00	5.30	2.69	0.00
14.00	4.25	1.86	2.41	65.00	5.30	2.69	0.00	116.00	5.30	2.69	0.00
15.00	4.46	2.02	1.61	66.00	5.30	2.69	0.00	117.00	5.30	2.69	0.00
16.00	4.61	2.14	1.08	67.00	5.30	2.69	0.00	118.00	5.30	2.69	0.00
17.00	4.74	2.24	0.75	68.00	5.30	2.69	0.00	119.00	5.30	2.69	0.00
18.00	4.85	2.33	0.57	69.00	5.30	2.69	0.00	120.00	5.30	2.69	0.00
19.00	4.94	2.40	0.45	70.00	5.30	2.69	0.00				
20.00	5.02	2.47	0.38	71.00	5.30	2.69	0.00				
21.00	5.10	2.53	0.34	72.00	5.30	2.69	0.00				
22.00	5.17	2.59	0.31	73.00	5.30	2.69	0.00				
23.00	5.24	2.64	0.29	74.00	5.30	2.69	0.00				
24.00	5.30	2.69	0.26	75.00	5.30	2.69	0.00				
25.00	5.30	2.69	0.17	76.00	5.30	2.69	0.00				
26.00	5.30	2.69	0.07	77.00	5.30	2.69	0.00				
27.00	5.30	2.69	0.03	78.00	5.30	2.69	0.00				
28.00	5.30	2.69	0.01	79.00	5.30	2.69	0.00				
29.00	5.30	2.69	0.00	80.00	5.30	2.69	0.00				
30.00	5.30	2.69	0.00	81.00	5.30	2.69	0.00				
31.00	5.30	2.69	0.00	82.00	5.30	2.69	0.00				
32.00	5.30	2.69	0.00	83.00	5.30	2.69	0.00				
33.00	5.30	2.69	0.00	84.00	5.30	2.69	0.00				
34.00	5.30	2.69	0.00	85.00	5.30	2.69	0.00				
35.00	5.30	2.69	0.00	86.00	5.30	2.69	0.00				
36.00	5.30	2.69	0.00	87.00	5.30	2.69	0.00				
37.00	5.30	2.69	0.00	88.00	5.30	2.69	0.00				
38.00	5.30	2.69	0.00	89.00	5.30	2.69	0.00				
39.00	5.30	2.69	0.00	90.00	5.30	2.69	0.00				
40.00	5.30	2.69	0.00	91.00	5.30	2.69	0.00				
41.00	5.30	2.69	0.00	92.00	5.30	2.69	0.00				
42.00	5.30	2.69	0.00	93.00	5.30	2.69	0.00				
43.00	5.30	2.69	0.00	94.00	5.30	2.69	0.00				
44.00	5.30	2.69	0.00	95.00	5.30	2.69	0.00				
45.00	5.30	2.69	0.00	96.00	5.30	2.69	0.00				
46.00	5.30	2.69	0.00	97.00	5.30	2.69	0.00				
47.00	5.30	2.69	0.00	98.00	5.30	2.69	0.00				
48.00	5.30	2.69	0.00	99.00	5.30	2.69	0.00				
49.00	5.30	2.69	0.00	100.00	5.30	2.69	0.00				
50.00	5.30	2.69	0.00	101.00	5.30	2.69	0.00				
51.00	5.30	2.69	0.00	102.00	5.30	2.69	0.00				

Summary for Pond EDB-1: PDA-2 Extended Detention Basin

Inflow Area = 4.742 ac, 38.59% Impervious, Inflow Depth = 2.69" for Cv-10YR event
 Inflow = 3.27 cfs @ 12.92 hrs, Volume= 1.065 af
 Outflow = 0.82 cfs @ 16.76 hrs, Volume= 1.065 af, Atten= 75%, Lag= 230.3 min
 Primary = 0.82 cfs @ 16.76 hrs, Volume= 1.065 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 8.77' @ 16.76 hrs Surf.Area= 22,741 sf Storage= 22,907 cf

Plug-Flow detention time= 376.0 min calculated for 1.065 af (100% of inflow)
 Center-of-Mass det. time= 376.1 min (1,313.2 - 937.1)

Volume	Invert	Avail.Storage	Storage Description
#1	7.20'	42,556 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

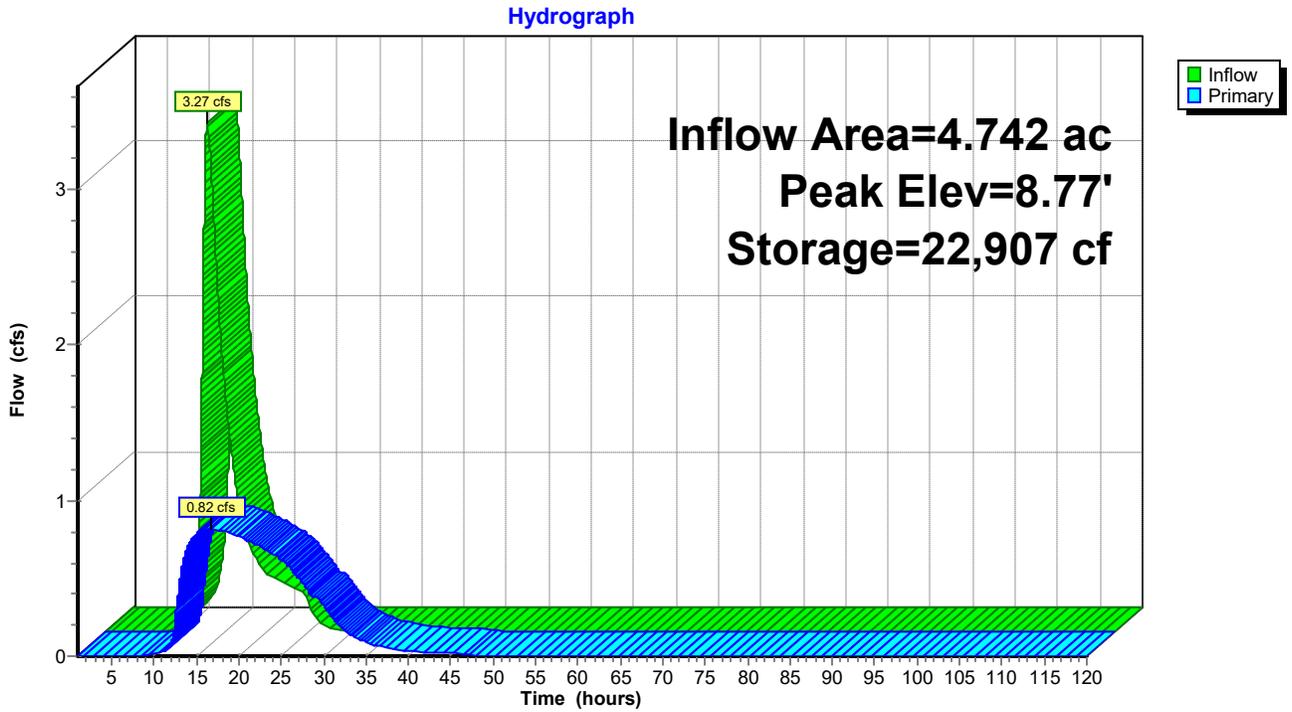
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
7.20	10,724	0	0
8.00	12,674	9,359	9,359
9.00	25,832	19,253	28,612
9.50	29,944	13,944	42,556

Device	Routing	Invert	Outlet Devices
#1	Primary	7.10'	6.0" Round Culvert L= 57.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.10' / 7.00' S= 0.0018 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.20 sf
#2	Primary	8.92'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

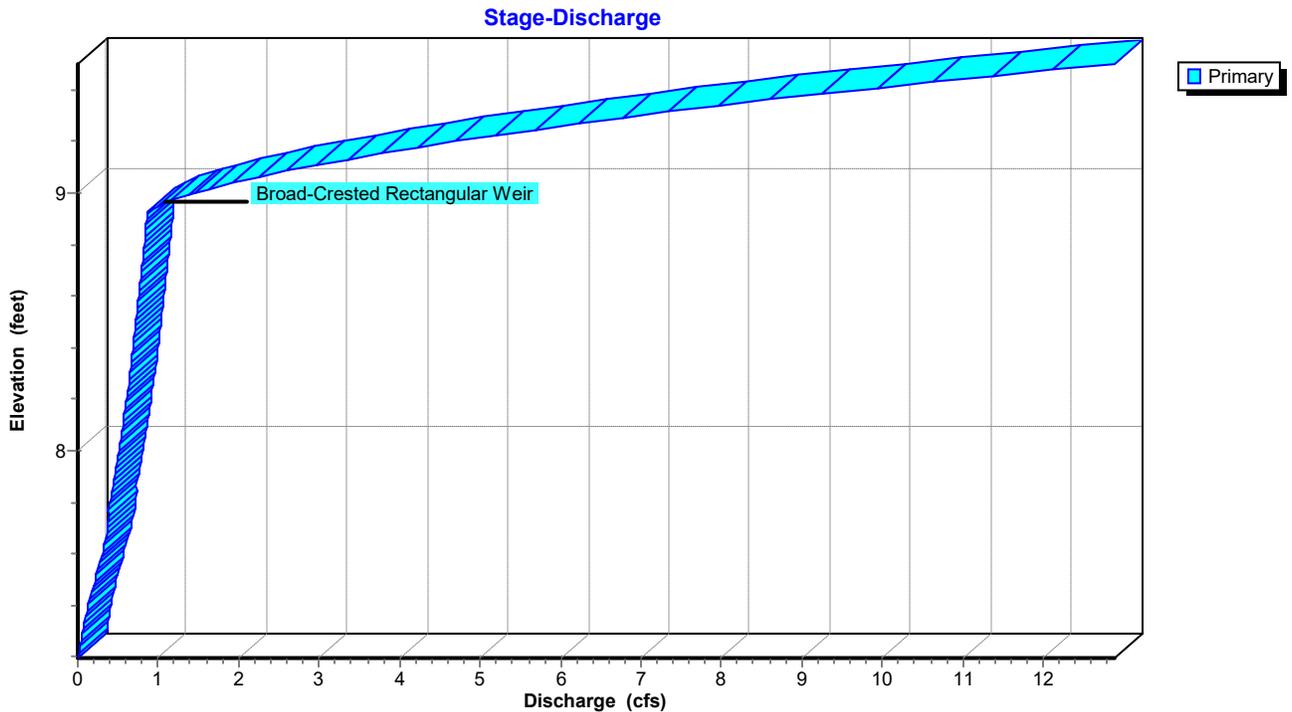
Primary OutFlow Max=0.82 cfs @ 16.76 hrs HW=8.77' (Free Discharge)

- 1=Culvert (Barrel Controls 0.82 cfs @ 4.15 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

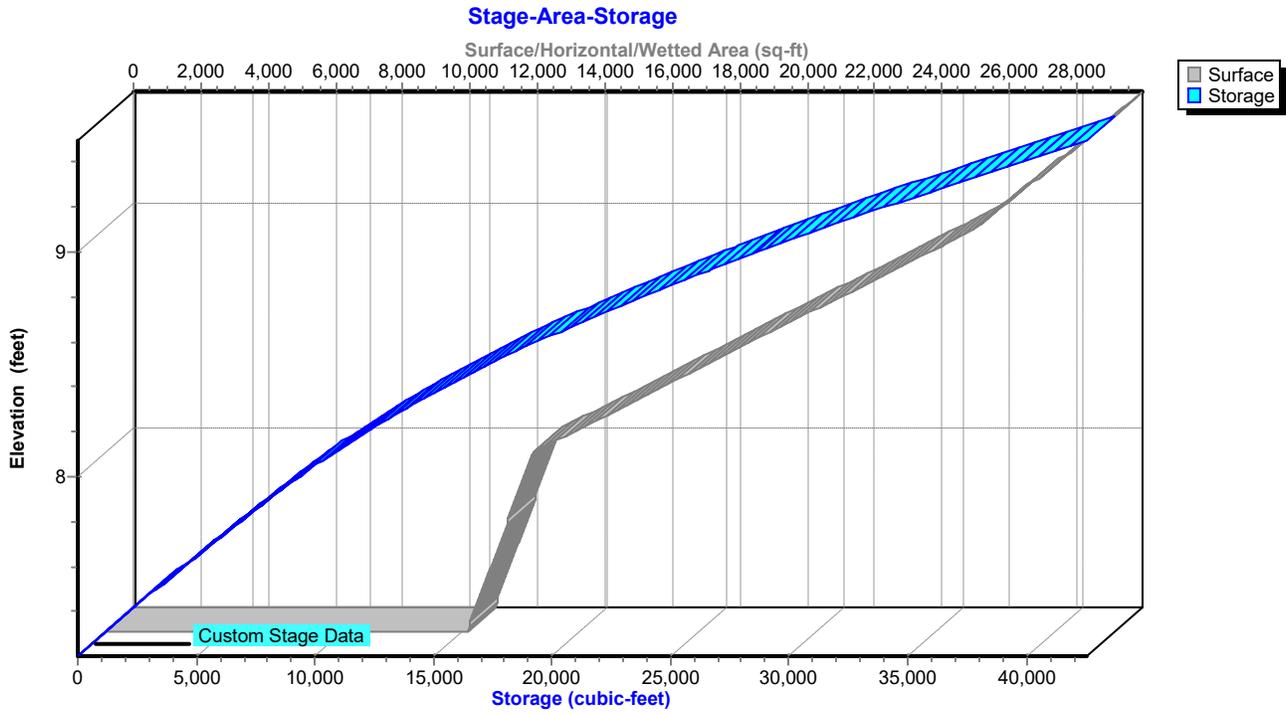
Pond EDB-1: PDA-2 Extended Detention Basin



Pond EDB-1: PDA-2 Extended Detention Basin



Pond EDB-1: PDA-2 Extended Detention Basin



Hydrograph for Pond EDB-1: PDA-2 Extended Detention Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	7.20	0.00	103.00	0.00	0	7.20	0.00
3.00	0.00	0	7.20	0.00	105.00	0.00	0	7.20	0.00
5.00	0.00	0	7.20	0.00	107.00	0.00	0	7.20	0.00
7.00	0.00	0	7.20	0.00	109.00	0.00	0	7.20	0.00
9.00	0.01	0	7.20	0.01	111.00	0.00	0	7.20	0.00
11.00	0.17	368	7.23	0.03	113.00	0.00	0	7.20	0.00
13.00	3.26	8,013	7.89	0.45	115.00	0.00	0	7.20	0.00
15.00	1.61	20,656	8.66	0.78	117.00	0.00	0	7.20	0.00
17.00	0.75	22,878	8.76	0.81	119.00	0.00	0	7.20	0.00
19.00	0.45	21,231	8.69	0.79					
21.00	0.34	18,442	8.56	0.74					
23.00	0.29	15,523	8.40	0.69					
25.00	0.17	12,625	8.23	0.62					
27.00	0.03	9,147	7.98	0.50					
29.00	0.00	6,128	7.74	0.38					
31.00	0.00	3,813	7.54	0.25					
33.00	0.00	2,429	7.42	0.14					
35.00	0.00	1,607	7.35	0.09					
37.00	0.00	1,085	7.30	0.06					
39.00	0.00	730	7.27	0.04					
41.00	0.00	475	7.24	0.03					
43.00	0.00	284	7.23	0.02					
45.00	0.00	136	7.21	0.02					
47.00	0.00	18	7.20	0.01					
49.00	0.00	0	7.20	0.00					
51.00	0.00	0	7.20	0.00					
53.00	0.00	0	7.20	0.00					
55.00	0.00	0	7.20	0.00					
57.00	0.00	0	7.20	0.00					
59.00	0.00	0	7.20	0.00					
61.00	0.00	0	7.20	0.00					
63.00	0.00	0	7.20	0.00					
65.00	0.00	0	7.20	0.00					
67.00	0.00	0	7.20	0.00					
69.00	0.00	0	7.20	0.00					
71.00	0.00	0	7.20	0.00					
73.00	0.00	0	7.20	0.00					
75.00	0.00	0	7.20	0.00					
77.00	0.00	0	7.20	0.00					
79.00	0.00	0	7.20	0.00					
81.00	0.00	0	7.20	0.00					
83.00	0.00	0	7.20	0.00					
85.00	0.00	0	7.20	0.00					
87.00	0.00	0	7.20	0.00					
89.00	0.00	0	7.20	0.00					
91.00	0.00	0	7.20	0.00					
93.00	0.00	0	7.20	0.00					
95.00	0.00	0	7.20	0.00					
97.00	0.00	0	7.20	0.00					
99.00	0.00	0	7.20	0.00					
101.00	0.00	0	7.20	0.00					

Stage-Discharge for Pond EDB-1: PDA-2 Extended Detention Basin

Elevation (feet)	Primary (cfs)								
7.20	0.00	7.71	0.38	8.22	0.61	8.73	0.80	9.24	5.54
7.21	0.02	7.72	0.38	8.23	0.62	8.74	0.81	9.25	5.77
7.22	0.02	7.73	0.38	8.24	0.62	8.75	0.81	9.26	5.99
7.23	0.02	7.74	0.39	8.25	0.63	8.76	0.81	9.27	6.23
7.24	0.03	7.75	0.39	8.26	0.63	8.77	0.82	9.28	6.47
7.25	0.03	7.76	0.38	8.27	0.64	8.78	0.82	9.29	6.71
7.26	0.04	7.77	0.38	8.28	0.64	8.79	0.82	9.30	6.95
7.27	0.04	7.78	0.38	8.29	0.64	8.80	0.83	9.31	7.20
7.28	0.05	7.79	0.39	8.30	0.65	8.81	0.83	9.32	7.45
7.29	0.05	7.80	0.40	8.31	0.65	8.82	0.83	9.33	7.72
7.30	0.06	7.81	0.40	8.32	0.66	8.83	0.84	9.34	7.99
7.31	0.06	7.82	0.41	8.33	0.66	8.84	0.84	9.35	8.26
7.32	0.07	7.83	0.42	8.34	0.66	8.85	0.84	9.36	8.54
7.33	0.08	7.84	0.42	8.35	0.67	8.86	0.85	9.37	8.82
7.34	0.08	7.85	0.43	8.36	0.67	8.87	0.85	9.38	9.11
7.35	0.09	7.86	0.43	8.37	0.68	8.88	0.85	9.39	9.40
7.36	0.10	7.87	0.44	8.38	0.68	8.89	0.85	9.40	9.70
7.37	0.11	7.88	0.45	8.39	0.68	8.90	0.86	9.41	10.00
7.38	0.11	7.89	0.45	8.40	0.69	8.91	0.86	9.42	10.30
7.39	0.12	7.90	0.46	8.41	0.69	8.92	0.86	9.43	10.61
7.40	0.13	7.91	0.46	8.42	0.70	8.93	0.89	9.44	10.92
7.41	0.14	7.92	0.47	8.43	0.70	8.94	0.94	9.45	11.24
7.42	0.14	7.93	0.48	8.44	0.70	8.95	1.00	9.46	11.56
7.43	0.15	7.94	0.48	8.45	0.71	8.96	1.07	9.47	11.89
7.44	0.16	7.95	0.49	8.46	0.71	8.97	1.16	9.48	12.22
7.45	0.17	7.96	0.49	8.47	0.71	8.98	1.25	9.49	12.55
7.46	0.18	7.97	0.50	8.48	0.72	8.99	1.35	9.50	12.89
7.47	0.19	7.98	0.50	8.49	0.72	9.00	1.45		
7.48	0.20	7.99	0.51	8.50	0.72	9.01	1.56		
7.49	0.20	8.00	0.51	8.51	0.73	9.02	1.68		
7.50	0.21	8.01	0.52	8.52	0.73	9.03	1.80		
7.51	0.22	8.02	0.52	8.53	0.74	9.04	1.93		
7.52	0.23	8.03	0.53	8.54	0.74	9.05	2.07		
7.53	0.24	8.04	0.53	8.55	0.74	9.06	2.21		
7.54	0.25	8.05	0.54	8.56	0.75	9.07	2.35		
7.55	0.26	8.06	0.54	8.57	0.75	9.08	2.50		
7.56	0.27	8.07	0.55	8.58	0.75	9.09	2.66		
7.57	0.27	8.08	0.55	8.59	0.76	9.10	2.82		
7.58	0.28	8.09	0.56	8.60	0.76	9.11	2.98		
7.59	0.29	8.10	0.56	8.61	0.76	9.12	3.15		
7.60	0.30	8.11	0.57	8.62	0.77	9.13	3.32		
7.61	0.31	8.12	0.57	8.63	0.77	9.14	3.50		
7.62	0.32	8.13	0.58	8.64	0.77	9.15	3.69		
7.63	0.32	8.14	0.58	8.65	0.78	9.16	3.88		
7.64	0.33	8.15	0.58	8.66	0.78	9.17	4.07		
7.65	0.34	8.16	0.59	8.67	0.78	9.18	4.27		
7.66	0.35	8.17	0.59	8.68	0.79	9.19	4.47		
7.67	0.35	8.18	0.60	8.69	0.79	9.20	4.68		
7.68	0.36	8.19	0.60	8.70	0.79	9.21	4.89		
7.69	0.37	8.20	0.61	8.71	0.80	9.22	5.10		
7.70	0.37	8.21	0.61	8.72	0.80	9.23	5.32		

Stage-Area-Storage for Pond EDB-1: PDA-2 Extended Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
7.20	10,724	0
7.25	10,846	539
7.30	10,968	1,085
7.35	11,090	1,636
7.40	11,212	2,194
7.45	11,333	2,757
7.50	11,455	3,327
7.55	11,577	3,903
7.60	11,699	4,485
7.65	11,821	5,073
7.70	11,943	5,667
7.75	12,065	6,267
7.80	12,187	6,873
7.85	12,308	7,486
7.90	12,430	8,104
7.95	12,552	8,729
8.00	12,674	9,359
8.05	13,332	10,009
8.10	13,990	10,692
8.15	14,648	11,408
8.20	15,306	12,157
8.25	15,964	12,939
8.30	16,621	13,754
8.35	17,279	14,601
8.40	17,937	15,481
8.45	18,595	16,395
8.50	19,253	17,341
8.55	19,911	18,320
8.60	20,569	19,332
8.65	21,227	20,377
8.70	21,885	21,455
8.75	22,543	22,565
8.80	23,200	23,709
8.85	23,858	24,885
8.90	24,516	26,095
8.95	25,174	27,337
9.00	25,832	28,612
9.05	26,243	29,914
9.10	26,654	31,237
9.15	27,066	32,580
9.20	27,477	33,943
9.25	27,888	35,327
9.30	28,299	36,732
9.35	28,710	38,157
9.40	29,122	39,603
9.45	29,533	41,069
9.50	29,944	42,556

Summary for Pond FB-1: Forebay-1

Inflow Area = 8.831 ac, 56.74% Impervious, Inflow Depth = 3.32" for Cv-10YR event
 Inflow = 27.97 cfs @ 12.14 hrs, Volume= 2.447 af
 Outflow = 24.73 cfs @ 12.17 hrs, Volume= 2.446 af, Atten= 12%, Lag= 1.8 min
 Primary = 24.73 cfs @ 12.17 hrs, Volume= 2.446 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 5.98' @ 12.19 hrs Surf.Area= 11,467 sf Storage= 11,668 cf

Plug-Flow detention time= 45.1 min calculated for 2.446 af (100% of inflow)
 Center-of-Mass det. time= 44.9 min (870.1 - 825.2)

Volume	Invert	Avail.Storage	Storage Description
#1	4.80'	26,672 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.80	6,640	0	0
5.00	9,288	1,593	1,593
5.50	10,318	4,902	6,494
6.00	11,527	5,461	11,956
6.50	13,670	6,299	18,255
7.00	20,000	8,418	26,672

Device	Routing	Invert	Outlet Devices
#1	Primary	4.80'	18.0" Round Culvert X 2.00 L= 85.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.80' / 4.50' S= 0.0035 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	5.55'	30.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

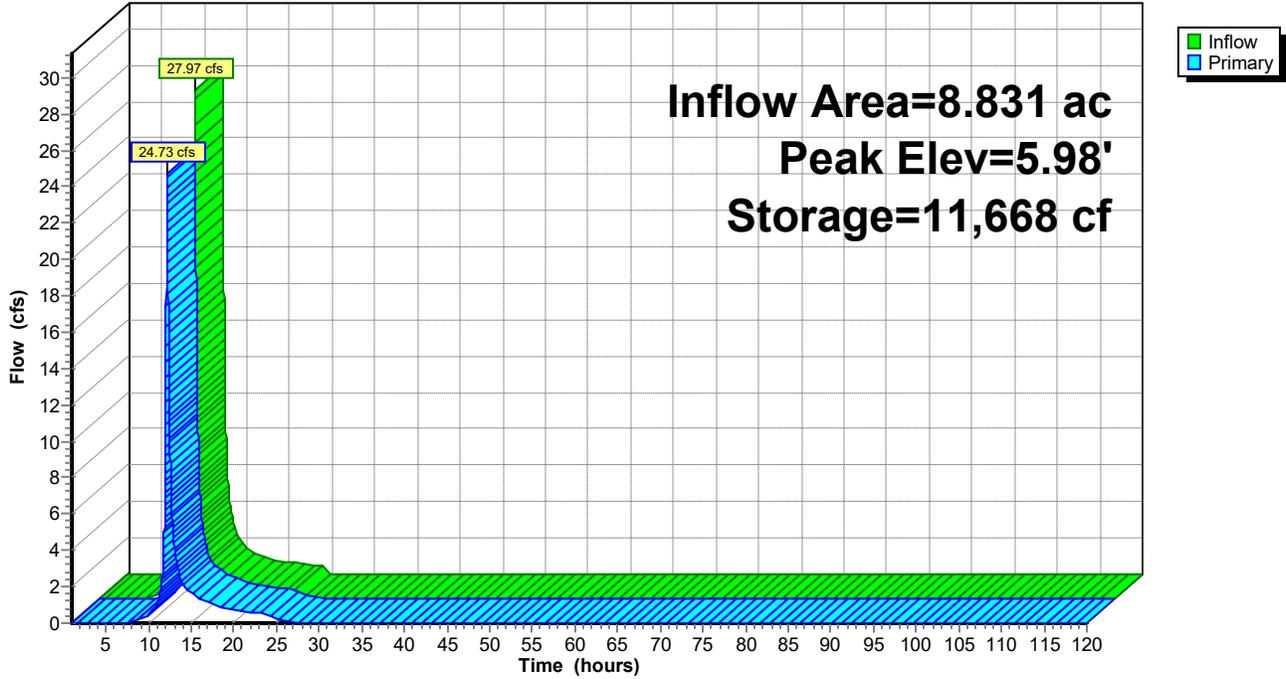
Primary OutFlow Max=24.25 cfs @ 12.17 hrs HW=5.97' TW=5.69' (Dynamic Tailwater)

1=Culvert (Outlet Controls 5.34 cfs @ 2.49 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 18.92 cfs @ 1.50 fps)

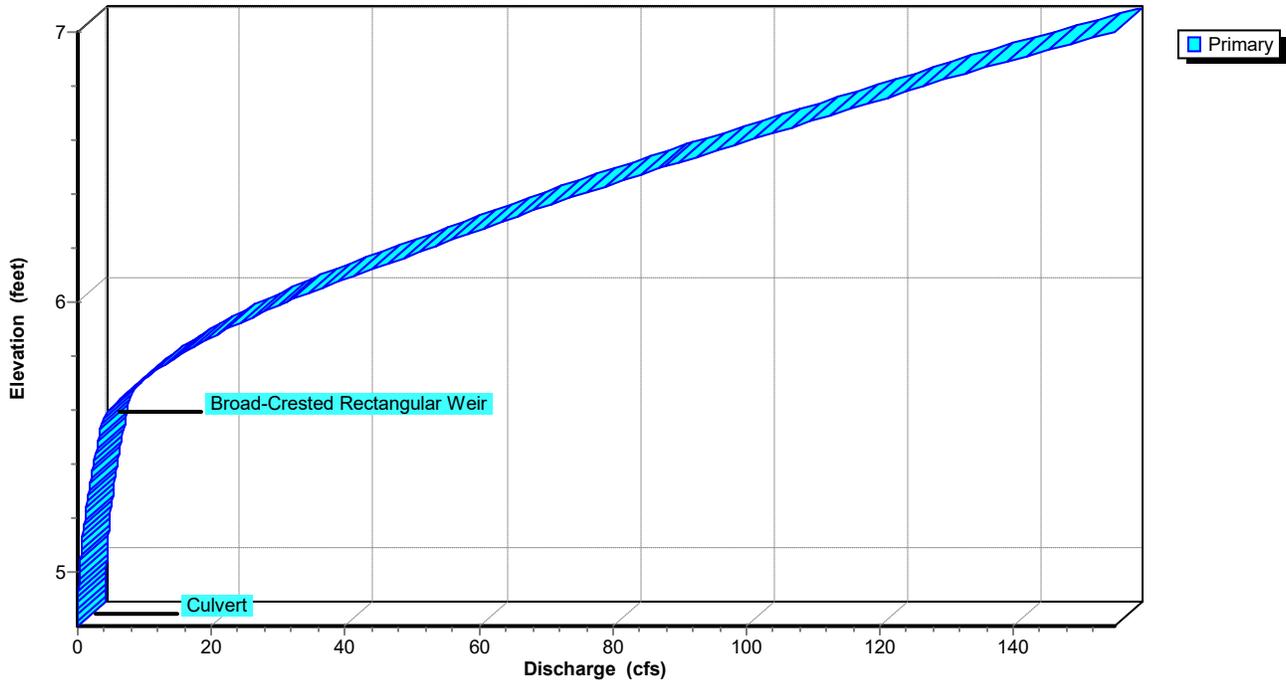
Pond FB-1: Forebay-1

Hydrograph

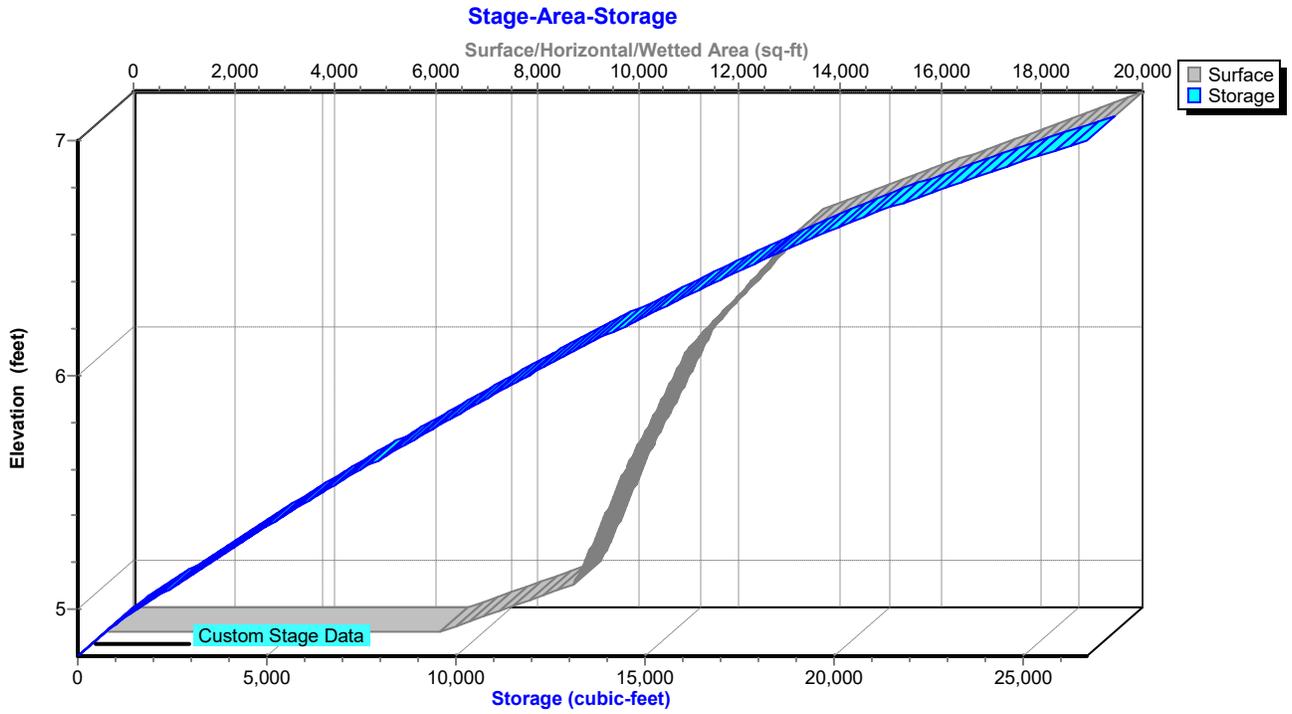


Pond FB-1: Forebay-1

Stage-Discharge



Pond FB-1: Forebay-1



Hydrograph for Pond FB-1: Forebay-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.80	0.00	103.00	0.00	36	4.81	0.00
3.00	0.00	0	4.80	0.00	105.00	0.00	36	4.81	0.00
5.00	0.00	0	4.80	0.00	107.00	0.00	35	4.81	0.00
7.00	0.08	155	4.82	0.00	109.00	0.00	34	4.81	0.00
9.00	0.38	1,310	4.97	0.18	111.00	0.00	33	4.81	0.00
11.00	1.80	3,656	5.22	1.17	113.00	0.00	33	4.80	0.00
13.00	4.07	8,051	5.65	4.40	115.00	0.00	32	4.80	0.00
15.00	1.39	6,674	5.52	1.68	117.00	0.00	31	4.80	0.00
17.00	0.95	4,898	5.34	1.16	119.00	0.00	31	4.80	0.00
19.00	0.70	3,630	5.21	0.81					
21.00	0.61	3,016	5.15	0.67					
23.00	0.51	2,626	5.11	0.56					
25.00	0.00	1,473	4.99	0.20					
27.00	0.00	705	4.90	0.06					
29.00	0.00	447	4.86	0.02					
31.00	0.00	328	4.85	0.01					
33.00	0.00	260	4.84	0.01					
35.00	0.00	216	4.83	0.01					
37.00	0.00	185	4.83	0.00					
39.00	0.00	162	4.82	0.00					
41.00	0.00	145	4.82	0.00					
43.00	0.00	131	4.82	0.00					
45.00	0.00	119	4.82	0.00					
47.00	0.00	110	4.82	0.00					
49.00	0.00	102	4.82	0.00					
51.00	0.00	95	4.81	0.00					
53.00	0.00	89	4.81	0.00					
55.00	0.00	84	4.81	0.00					
57.00	0.00	79	4.81	0.00					
59.00	0.00	75	4.81	0.00					
61.00	0.00	71	4.81	0.00					
63.00	0.00	68	4.81	0.00					
65.00	0.00	65	4.81	0.00					
67.00	0.00	62	4.81	0.00					
69.00	0.00	60	4.81	0.00					
71.00	0.00	58	4.81	0.00					
73.00	0.00	56	4.81	0.00					
75.00	0.00	54	4.81	0.00					
77.00	0.00	52	4.81	0.00					
79.00	0.00	50	4.81	0.00					
81.00	0.00	49	4.81	0.00					
83.00	0.00	47	4.81	0.00					
85.00	0.00	46	4.81	0.00					
87.00	0.00	44	4.81	0.00					
89.00	0.00	43	4.81	0.00					
91.00	0.00	42	4.81	0.00					
93.00	0.00	41	4.81	0.00					
95.00	0.00	40	4.81	0.00					
97.00	0.00	39	4.81	0.00					
99.00	0.00	38	4.81	0.00					
101.00	0.00	37	4.81	0.00					

Stage-Discharge for Pond FB-1: Forebay-1

Elevation (feet)	Primary (cfs)								
4.80	0.00	5.31	1.74	5.82	16.41	6.33	67.12	6.84	131.84
4.81	0.00	5.32	1.81	5.83	17.11	6.34	68.27	6.85	133.24
4.82	0.00	5.33	1.87	5.84	17.83	6.35	69.43	6.86	134.65
4.83	0.00	5.34	1.94	5.85	18.57	6.36	70.61	6.87	136.07
4.84	0.01	5.35	2.01	5.86	19.32	6.37	71.80	6.88	137.49
4.85	0.01	5.36	2.08	5.87	20.08	6.38	72.99	6.89	138.91
4.86	0.02	5.37	2.16	5.88	20.85	6.39	74.19	6.90	140.33
4.87	0.03	5.38	2.23	5.89	21.64	6.40	75.40	6.91	141.76
4.88	0.04	5.39	2.30	5.90	22.44	6.41	76.61	6.92	143.19
4.89	0.05	5.40	2.38	5.91	23.26	6.42	77.83	6.93	144.63
4.90	0.06	5.41	2.45	5.92	24.09	6.43	79.05	6.94	146.07
4.91	0.07	5.42	2.53	5.93	24.93	6.44	80.28	6.95	147.51
4.92	0.09	5.43	2.61	5.94	25.79	6.45	81.51	6.96	149.01
4.93	0.11	5.44	2.69	5.95	26.66	6.46	82.75	6.97	150.51
4.94	0.12	5.45	2.76	5.96	27.56	6.47	83.99	6.98	152.01
4.95	0.14	5.46	2.85	5.97	28.48	6.48	85.24	6.99	153.52
4.96	0.16	5.47	2.93	5.98	29.41	6.49	86.50	7.00	155.04
4.97	0.19	5.48	3.01	5.99	30.35	6.50	87.76		
4.98	0.21	5.49	3.09	6.00	31.31	6.51	89.02		
4.99	0.23	5.50	3.18	6.01	32.29	6.52	90.29		
5.00	0.26	5.51	3.26	6.02	33.27	6.53	91.56		
5.01	0.29	5.52	3.35	6.03	34.28	6.54	92.84		
5.02	0.32	5.53	3.43	6.04	35.29	6.55	94.12		
5.03	0.35	5.54	3.52	6.05	36.33	6.56	95.39		
5.04	0.38	5.55	3.61	6.06	37.37	6.57	96.67		
5.05	0.42	5.56	3.77	6.07	38.43	6.58	97.95		
5.06	0.45	5.57	3.99	6.08	39.51	6.59	99.23		
5.07	0.49	5.58	4.24	6.09	40.60	6.60	100.52		
5.08	0.52	5.59	4.53	6.10	41.70	6.61	101.81		
5.09	0.56	5.60	4.85	6.11	42.82	6.62	103.10		
5.10	0.60	5.61	5.19	6.12	43.95	6.63	104.39		
5.11	0.65	5.62	5.56	6.13	45.10	6.64	105.69		
5.12	0.69	5.63	5.94	6.14	46.26	6.65	106.99		
5.13	0.73	5.64	6.35	6.15	47.43	6.66	108.30		
5.14	0.78	5.65	6.77	6.16	48.47	6.67	109.60		
5.15	0.83	5.66	7.21	6.17	49.52	6.68	110.91		
5.16	0.87	5.67	7.67	6.18	50.57	6.69	112.22		
5.17	0.92	5.68	8.15	6.19	51.63	6.70	113.53		
5.18	0.97	5.69	8.64	6.20	52.70	6.71	114.84		
5.19	1.03	5.70	9.14	6.21	53.77	6.72	116.15		
5.20	1.08	5.71	9.66	6.22	54.85	6.73	117.46		
5.21	1.13	5.72	10.19	6.23	55.94	6.74	118.77		
5.22	1.19	5.73	10.74	6.24	57.03	6.75	120.08		
5.23	1.24	5.74	11.29	6.25	58.13	6.76	121.36		
5.24	1.30	5.75	11.87	6.26	59.23	6.77	122.64		
5.25	1.36	5.76	12.47	6.27	60.34	6.78	123.90		
5.26	1.42	5.77	13.09	6.28	61.46	6.79	125.14		
5.27	1.48	5.78	13.72	6.29	62.58	6.80	126.25		
5.28	1.55	5.79	14.37	6.30	63.71	6.81	127.64		
5.29	1.61	5.80	15.04	6.31	64.84	6.82	129.04		
5.30	1.67	5.81	15.71	6.32	65.98	6.83	130.43		

Stage-Area-Storage for Pond FB-1: Forebay-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.80	6,640	0
4.85	7,302	349
4.90	7,964	730
4.95	8,626	1,145
5.00	9,288	1,593
5.05	9,991	2,060
5.10	9,494	2,532
5.15	9,597	3,009
5.20	9,700	3,492
5.25	9,803	3,979
5.30	9,906	4,472
5.35	10,009	4,970
5.40	10,112	5,473
5.45	10,215	5,981
5.50	10,318	6,494
5.55	10,439	7,013
5.60	10,560	7,538
5.65	10,681	8,069
5.70	10,802	8,606
5.75	10,923	9,149
5.80	11,043	9,699
5.85	11,164	10,254
5.90	11,285	10,815
5.95	11,406	11,382
6.00	11,527	11,956
6.05	11,741	12,537
6.10	11,956	13,130
6.15	12,170	13,733
6.20	12,384	14,347
6.25	12,599	14,971
6.30	12,813	15,607
6.35	13,027	16,253
6.40	13,241	16,909
6.45	13,456	17,577
6.50	13,670	18,255
6.55	14,303	18,954
6.60	14,936	19,685
6.65	15,569	20,448
6.70	16,202	21,242
6.75	16,835	22,068
6.80	17,468	22,926
6.85	18,101	23,815
6.90	18,734	24,736
6.95	19,367	25,688
7.00	20,000	26,672

Summary for Pond FB-2: Forebay-2

Inflow Area = 2.146 ac, 55.72% Impervious, Inflow Depth = 3.45" for Cv-10YR event
 Inflow = 7.49 cfs @ 12.13 hrs, Volume= 0.617 af
 Outflow = 6.87 cfs @ 12.15 hrs, Volume= 0.616 af, Atten= 8%, Lag= 1.3 min
 Primary = 6.87 cfs @ 12.15 hrs, Volume= 0.616 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 5.86' @ 12.16 hrs Surf.Area= 4,058 sf Storage= 3,615 cf

Plug-Flow detention time= 51.8 min calculated for 0.616 af (100% of inflow)
 Center-of-Mass det. time= 51.6 min (872.2 - 820.6)

Volume	Invert	Avail.Storage	Storage Description
#1	4.80'	12,665 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.80	2,476	0	0
5.00	3,049	553	553
5.50	3,625	1,669	2,221
6.00	4,222	1,962	4,183
6.50	4,854	2,269	6,452
7.00	20,000	6,214	12,665

Device	Routing	Invert	Outlet Devices
#1	Primary	4.80'	12.0" Round Culvert L= 48.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.80' / 4.50' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	5.65'	23.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

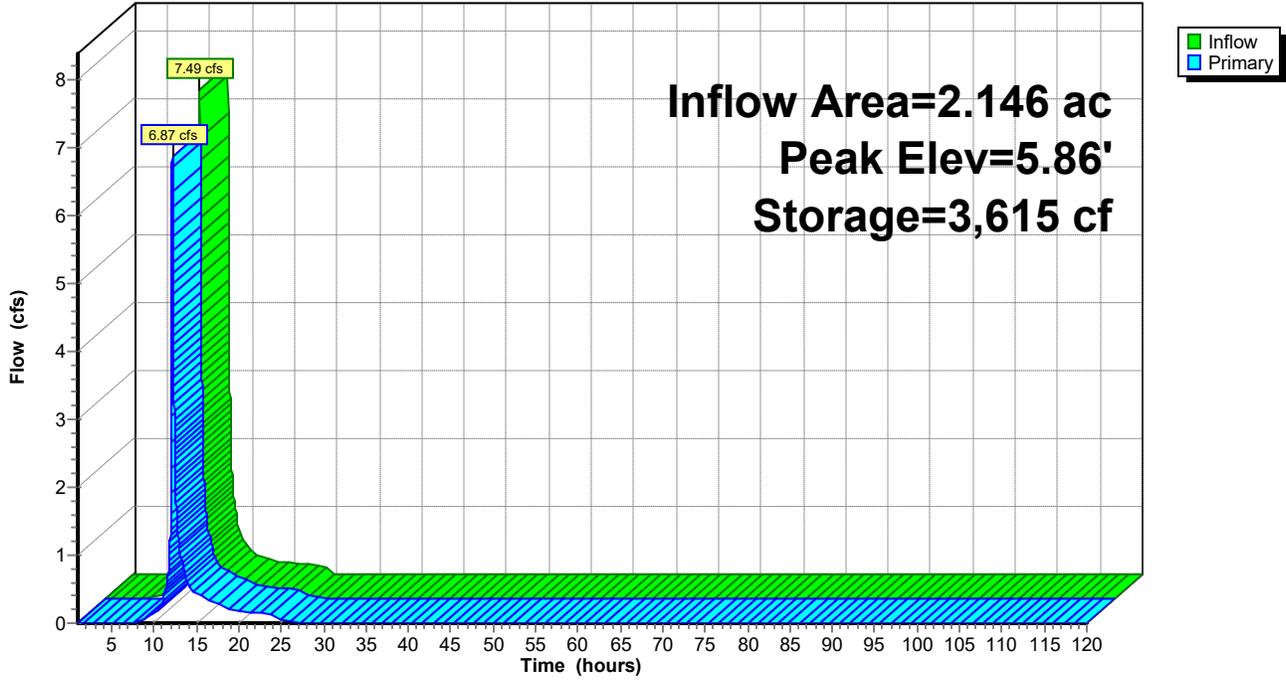
Primary OutFlow Max=6.75 cfs @ 12.15 hrs HW=5.86' TW=5.67' (Dynamic Tailwater)

1=Culvert (Outlet Controls 1.46 cfs @ 2.18 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 5.29 cfs @ 1.09 fps)

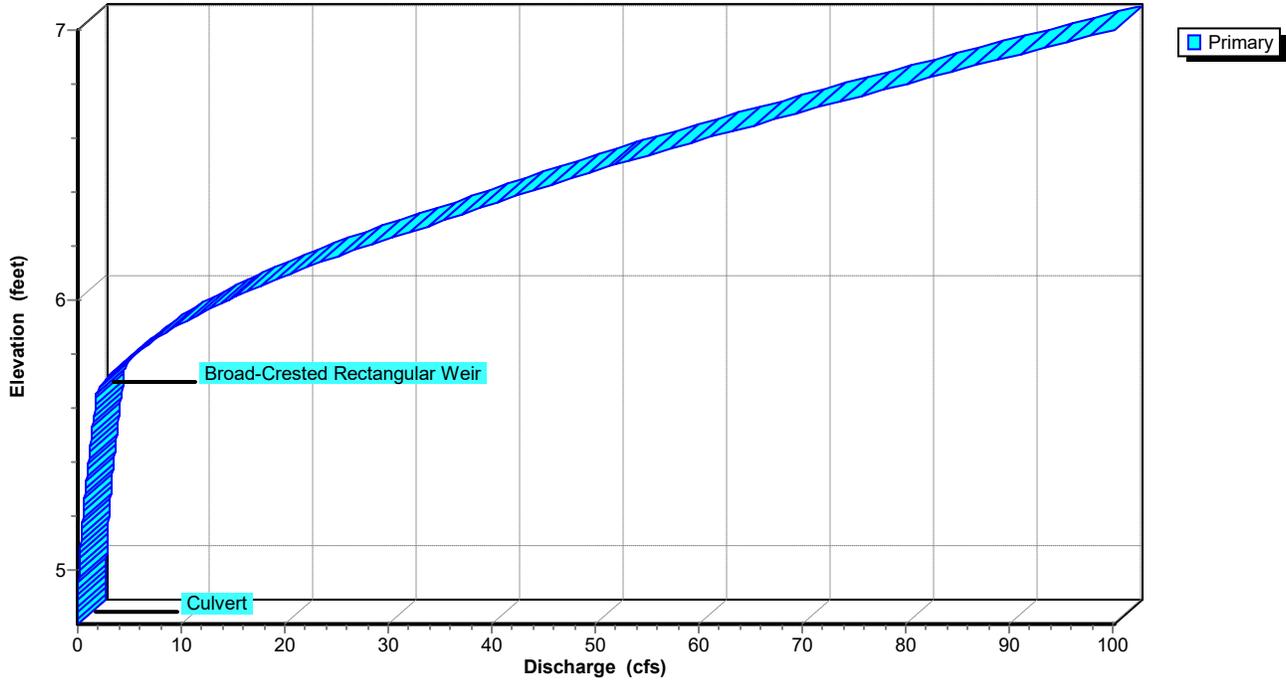
Pond FB-2: Forebay-2

Hydrograph

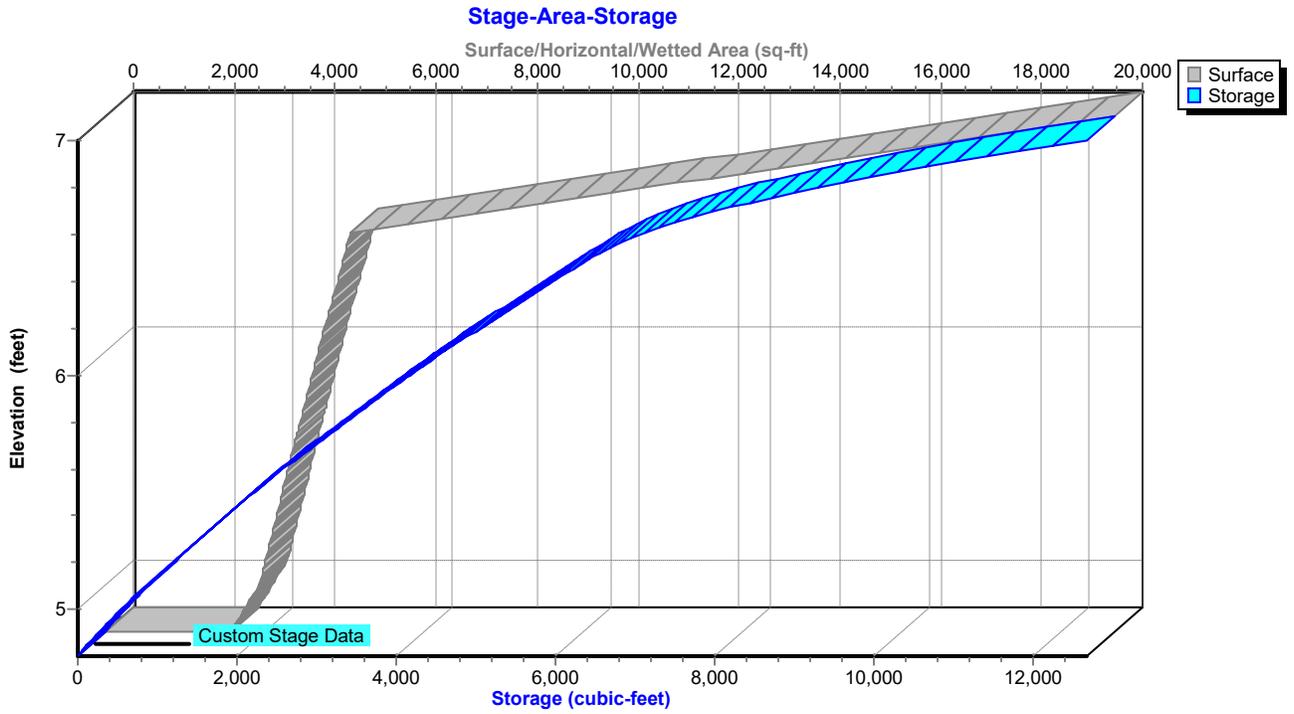


Pond FB-2: Forebay-2

Stage-Discharge



Pond FB-2: Forebay-2



Hydrograph for Pond FB-2: Forebay-2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.80	0.00	103.00	0.00	10	4.80	0.00
3.00	0.00	0	4.80	0.00	105.00	0.00	9	4.80	0.00
5.00	0.00	0	4.80	0.00	107.00	0.00	9	4.80	0.00
7.00	0.03	64	4.83	0.00	109.00	0.00	9	4.80	0.00
9.00	0.11	369	4.94	0.06	111.00	0.00	9	4.80	0.00
11.00	0.48	916	5.12	0.32	113.00	0.00	9	4.80	0.00
13.00	1.00	2,838	5.67	1.09	115.00	0.00	9	4.80	0.00
15.00	0.34	2,063	5.46	0.44	117.00	0.00	8	4.80	0.00
17.00	0.23	1,435	5.28	0.31	119.00	0.00	8	4.80	0.00
19.00	0.17	993	5.14	0.21					
21.00	0.15	782	5.07	0.17					
23.00	0.13	663	5.04	0.14					
25.00	0.00	367	4.94	0.05					
27.00	0.00	178	4.87	0.01					
29.00	0.00	113	4.84	0.01					
31.00	0.00	83	4.83	0.00					
33.00	0.00	66	4.83	0.00					
35.00	0.00	55	4.82	0.00					
37.00	0.00	48	4.82	0.00					
39.00	0.00	42	4.82	0.00					
41.00	0.00	37	4.81	0.00					
43.00	0.00	34	4.81	0.00					
45.00	0.00	31	4.81	0.00					
47.00	0.00	29	4.81	0.00					
49.00	0.00	27	4.81	0.00					
51.00	0.00	25	4.81	0.00					
53.00	0.00	23	4.81	0.00					
55.00	0.00	22	4.81	0.00					
57.00	0.00	21	4.81	0.00					
59.00	0.00	20	4.81	0.00					
61.00	0.00	19	4.81	0.00					
63.00	0.00	18	4.81	0.00					
65.00	0.00	17	4.81	0.00					
67.00	0.00	16	4.81	0.00					
69.00	0.00	16	4.81	0.00					
71.00	0.00	15	4.81	0.00					
73.00	0.00	15	4.81	0.00					
75.00	0.00	14	4.81	0.00					
77.00	0.00	14	4.81	0.00					
79.00	0.00	13	4.81	0.00					
81.00	0.00	13	4.81	0.00					
83.00	0.00	12	4.81	0.00					
85.00	0.00	12	4.80	0.00					
87.00	0.00	12	4.80	0.00					
89.00	0.00	11	4.80	0.00					
91.00	0.00	11	4.80	0.00					
93.00	0.00	11	4.80	0.00					
95.00	0.00	11	4.80	0.00					
97.00	0.00	10	4.80	0.00					
99.00	0.00	10	4.80	0.00					
101.00	0.00	10	4.80	0.00					

Stage-Discharge for Pond FB-2: Forebay-2

Elevation (feet)	Primary (cfs)								
4.80	0.00	5.31	0.78	5.82	6.18	6.33	38.03	6.84	83.94
4.81	0.00	5.32	0.81	5.83	6.55	6.34	38.81	6.85	84.95
4.82	0.00	5.33	0.84	5.84	6.93	6.35	39.59	6.86	85.94
4.83	0.00	5.34	0.87	5.85	7.32	6.36	40.37	6.87	86.94
4.84	0.00	5.35	0.89	5.86	7.74	6.37	41.16	6.88	87.95
4.85	0.01	5.36	0.92	5.87	8.16	6.38	41.96	6.89	88.95
4.86	0.01	5.37	0.95	5.88	8.60	6.39	42.76	6.90	89.96
4.87	0.01	5.38	0.98	5.89	9.04	6.40	43.56	6.91	90.98
4.88	0.02	5.39	1.01	5.90	9.50	6.41	44.37	6.92	91.99
4.89	0.03	5.40	1.04	5.91	9.97	6.42	45.18	6.93	93.01
4.90	0.03	5.41	1.07	5.92	10.44	6.43	46.00	6.94	94.03
4.91	0.04	5.42	1.10	5.93	10.93	6.44	46.82	6.95	95.06
4.92	0.05	5.43	1.13	5.94	11.43	6.45	47.65	6.96	96.09
4.93	0.05	5.44	1.16	5.95	11.93	6.46	48.50	6.97	97.12
4.94	0.06	5.45	1.19	5.96	12.45	6.47	49.35	6.98	98.16
4.95	0.07	5.46	1.22	5.97	12.97	6.48	50.21	6.99	99.19
4.96	0.08	5.47	1.25	5.98	13.51	6.49	51.07	7.00	100.24
4.97	0.09	5.48	1.28	5.99	14.05	6.50	51.94		
4.98	0.11	5.49	1.31	6.00	14.61	6.51	52.81		
4.99	0.12	5.50	1.35	6.01	15.17	6.52	53.69		
5.00	0.13	5.51	1.38	6.02	15.74	6.53	54.57		
5.01	0.14	5.52	1.41	6.03	16.32	6.54	55.46		
5.02	0.16	5.53	1.44	6.04	16.91	6.55	56.35		
5.03	0.17	5.54	1.47	6.05	17.51	6.56	57.25		
5.04	0.19	5.55	1.50	6.06	18.13	6.57	58.15		
5.05	0.20	5.56	1.54	6.07	18.76	6.58	59.06		
5.06	0.22	5.57	1.57	6.08	19.40	6.59	59.97		
5.07	0.24	5.58	1.60	6.09	20.05	6.60	60.89		
5.08	0.26	5.59	1.63	6.10	20.70	6.61	61.81		
5.09	0.27	5.60	1.67	6.11	21.37	6.62	62.73		
5.10	0.29	5.61	1.70	6.12	22.04	6.63	63.66		
5.11	0.31	5.62	1.73	6.13	22.70	6.64	64.60		
5.12	0.33	5.63	1.76	6.14	23.38	6.65	65.54		
5.13	0.35	5.64	1.79	6.15	24.11	6.66	66.47		
5.14	0.37	5.65	1.83	6.16	24.85	6.67	67.41		
5.15	0.39	5.66	1.91	6.17	25.61	6.68	68.35		
5.16	0.41	5.67	2.05	6.18	26.37	6.69	69.29		
5.17	0.43	5.68	2.21	6.19	27.14	6.70	70.24		
5.18	0.46	5.69	2.39	6.20	27.93	6.71	71.19		
5.19	0.48	5.70	2.60	6.21	28.72	6.72	72.15		
5.20	0.50	5.71	2.82	6.22	29.53	6.73	73.11		
5.21	0.53	5.72	3.06	6.23	30.34	6.74	74.08		
5.22	0.55	5.73	3.32	6.24	31.17	6.75	75.04		
5.23	0.57	5.74	3.59	6.25	32.01	6.76	76.02		
5.24	0.60	5.75	3.87	6.26	32.74	6.77	76.99		
5.25	0.62	5.76	4.17	6.27	33.48	6.78	77.97		
5.26	0.65	5.77	4.47	6.28	34.23	6.79	78.96		
5.27	0.68	5.78	4.79	6.29	34.98	6.80	79.95		
5.28	0.70	5.79	5.13	6.30	35.73	6.81	80.94		
5.29	0.73	5.80	5.47	6.31	36.49	6.82	81.94		
5.30	0.75	5.81	5.82	6.32	37.26	6.83	82.94		

Stage-Area-Storage for Pond FB-2: Forebay-2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.80	2,476	0
4.85	2,619	127
4.90	2,762	262
4.95	2,906	404
5.00	3,049	553
5.05	3,107	706
5.10	3,164	863
5.15	3,222	1,023
5.20	3,279	1,185
5.25	3,337	1,351
5.30	3,395	1,519
5.35	3,452	1,690
5.40	3,510	1,864
5.45	3,567	2,041
5.50	3,625	2,221
5.55	3,685	2,404
5.60	3,744	2,589
5.65	3,804	2,778
5.70	3,864	2,970
5.75	3,924	3,165
5.80	3,983	3,362
5.85	4,043	3,563
5.90	4,103	3,767
5.95	4,162	3,973
6.00	4,222	4,183
6.05	4,285	4,395
6.10	4,348	4,611
6.15	4,412	4,830
6.20	4,475	5,052
6.25	4,538	5,278
6.30	4,601	5,506
6.35	4,664	5,738
6.40	4,728	5,973
6.45	4,791	6,211
6.50	4,854	6,452
6.55	6,369	6,732
6.60	7,883	7,089
6.65	9,398	7,521
6.70	10,912	8,028
6.75	12,427	8,612
6.80	13,942	9,271
6.85	15,456	10,006
6.90	16,971	10,817
6.95	18,485	11,703
7.00	20,000	12,665

Summary for Pond LS: Level Spreader 1NPDES Outfall #2

Inflow Area = 6.001 ac, 37.57% Impervious, Inflow Depth = 2.01" for Cv-10YR event
 Inflow = 2.78 cfs @ 13.08 hrs, Volume= 1.008 af
 Outflow = 2.78 cfs @ 13.08 hrs, Volume= 1.008 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.78 cfs @ 13.08 hrs, Volume= 1.008 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 5.47' @ 13.08 hrs

Flood Elev= 11.00'

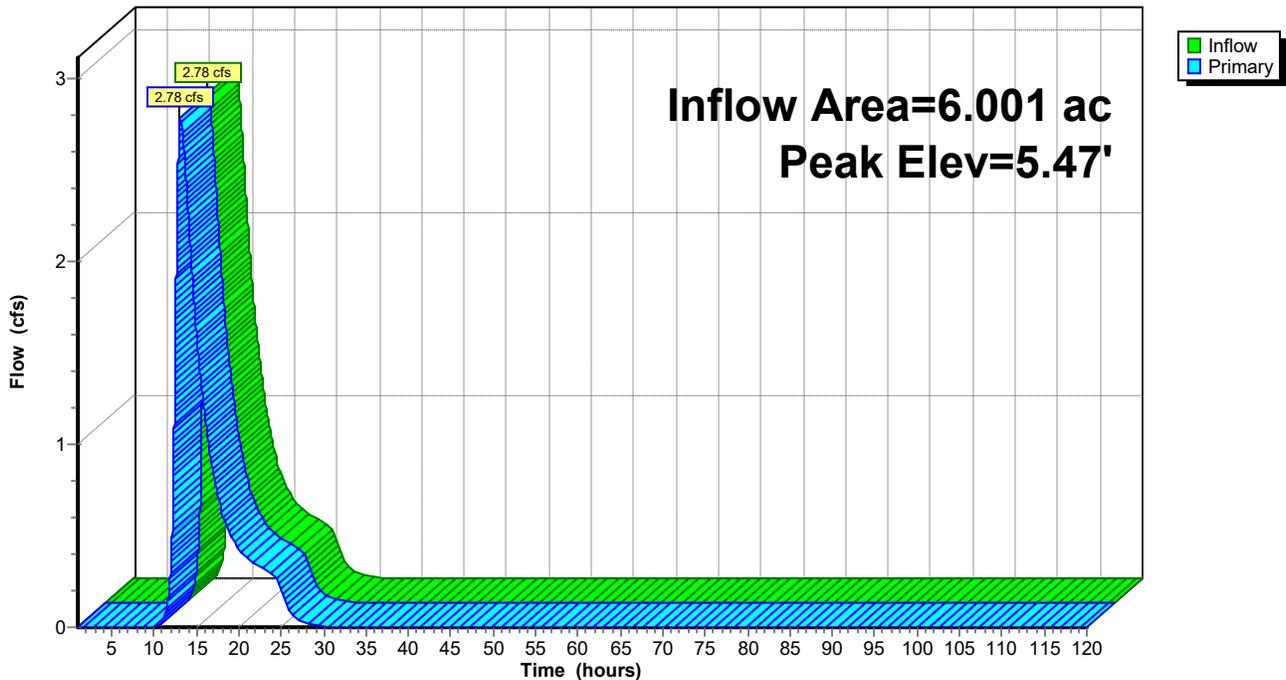
Device	Routing	Invert	Outlet Devices
#1	Primary	5.40'	45.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=2.78 cfs @ 13.08 hrs HW=5.47' (Free Discharge)

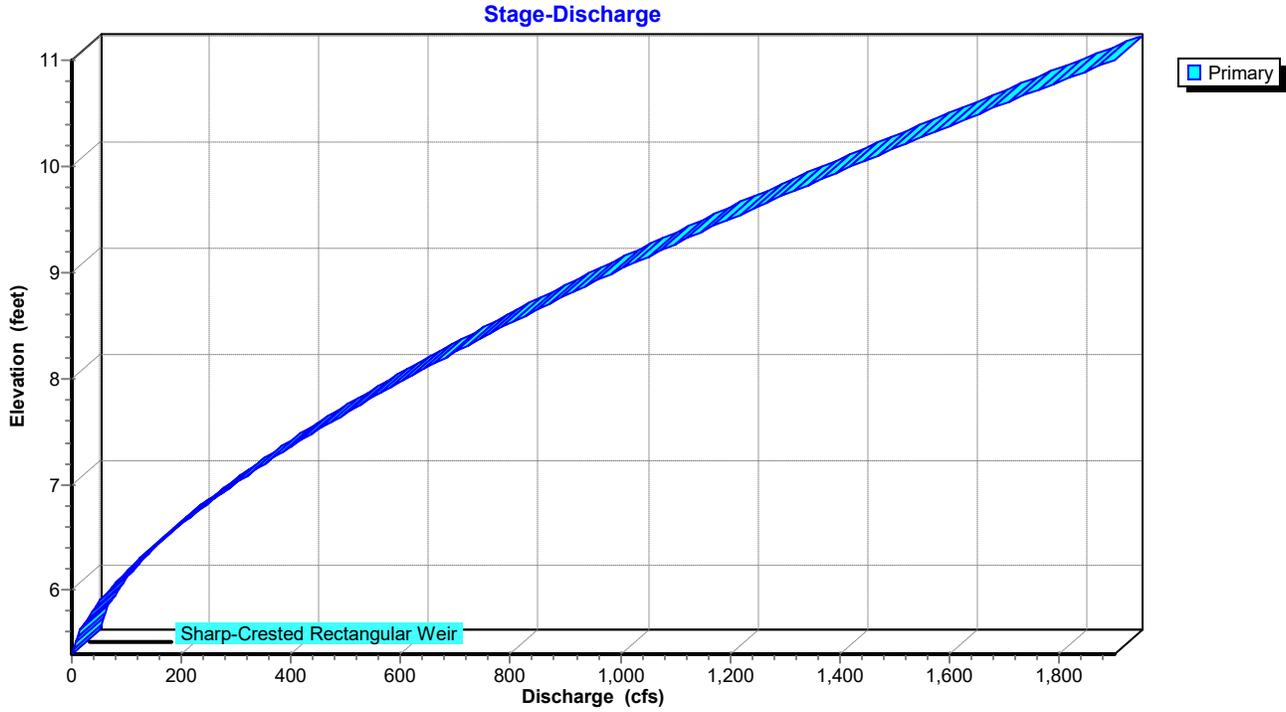
↳1=Sharp-Crested Rectangular Weir (Weir Controls 2.78 cfs @ 0.87 fps)

Pond LS: Level Spreader 1NPDES Outfall #2

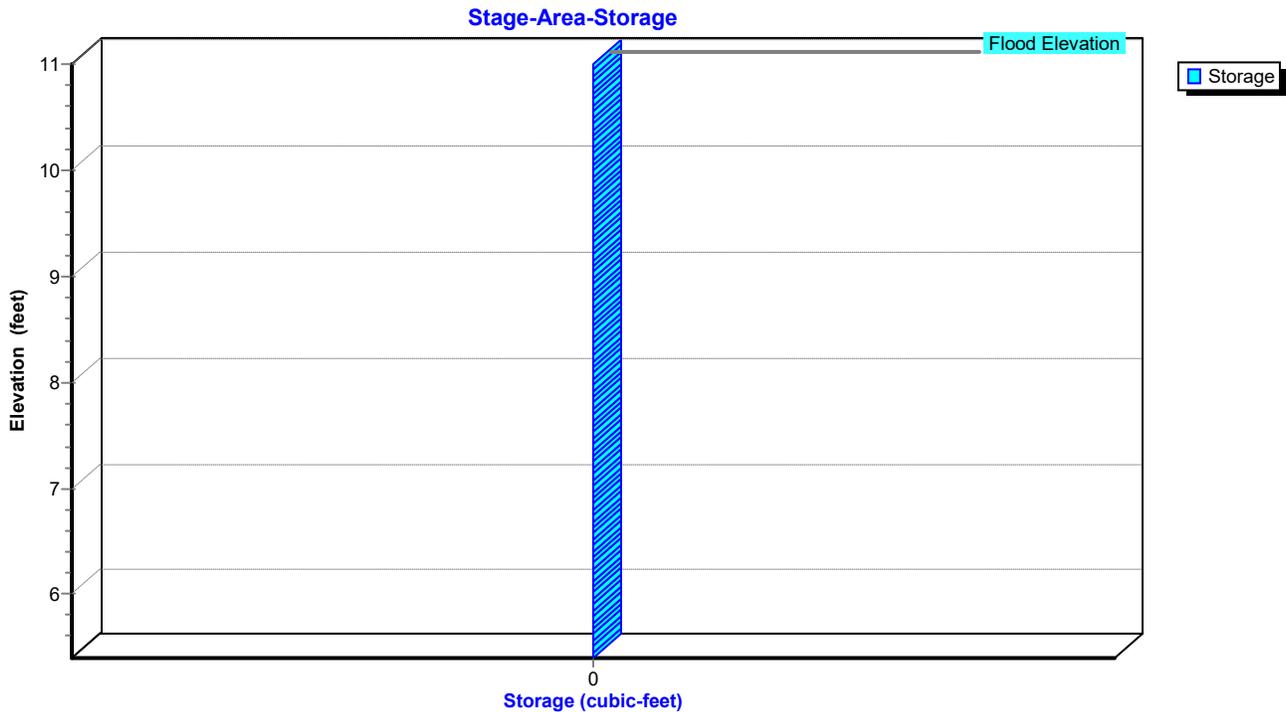
Hydrograph



Pond LS: Level Spreader 1NPDES Outfall #2



Pond LS: Level Spreader 1NPDES Outfall #2



Hydrograph for Pond LS: Level Spreader 1NPDES Outfall #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	5.40	0.00	103.00	0.00	5.40	0.00
3.00	0.00	5.40	0.00	105.00	0.00	5.40	0.00
5.00	0.00	5.40	0.00	107.00	0.00	5.40	0.00
7.00	0.00	5.40	0.00	109.00	0.00	5.40	0.00
9.00	0.00	5.40	0.00	111.00	0.00	5.40	0.00
11.00	0.03	5.40	0.03	113.00	0.00	5.40	0.00
13.00	2.74	5.47	2.74	115.00	0.00	5.40	0.00
15.00	1.62	5.45	1.62	117.00	0.00	5.40	0.00
17.00	0.84	5.43	0.84	119.00	0.00	5.40	0.00
19.00	0.50	5.42	0.50				
21.00	0.37	5.42	0.37				
23.00	0.32	5.42	0.32				
25.00	0.20	5.41	0.20				
27.00	0.04	5.40	0.04				
29.00	0.01	5.40	0.01				
31.00	0.00	5.40	0.00				
33.00	0.00	5.40	0.00				
35.00	0.00	5.40	0.00				
37.00	0.00	5.40	0.00				
39.00	0.00	5.40	0.00				
41.00	0.00	5.40	0.00				
43.00	0.00	5.40	0.00				
45.00	0.00	5.40	0.00				
47.00	0.00	5.40	0.00				
49.00	0.00	5.40	0.00				
51.00	0.00	5.40	0.00				
53.00	0.00	5.40	0.00				
55.00	0.00	5.40	0.00				
57.00	0.00	5.40	0.00				
59.00	0.00	5.40	0.00				
61.00	0.00	5.40	0.00				
63.00	0.00	5.40	0.00				
65.00	0.00	5.40	0.00				
67.00	0.00	5.40	0.00				
69.00	0.00	5.40	0.00				
71.00	0.00	5.40	0.00				
73.00	0.00	5.40	0.00				
75.00	0.00	5.40	0.00				
77.00	0.00	5.40	0.00				
79.00	0.00	5.40	0.00				
81.00	0.00	5.40	0.00				
83.00	0.00	5.40	0.00				
85.00	0.00	5.40	0.00				
87.00	0.00	5.40	0.00				
89.00	0.00	5.40	0.00				
91.00	0.00	5.40	0.00				
93.00	0.00	5.40	0.00				
95.00	0.00	5.40	0.00				
97.00	0.00	5.40	0.00				
99.00	0.00	5.40	0.00				
101.00	0.00	5.40	0.00				

Stage-Discharge for Pond LS: Level Spreader 1NPDES Outfall #2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
5.40	0.00	7.44	424.86	9.48	1,190.70
5.44	1.18	7.48	437.34	9.52	1,208.04
5.48	3.33	7.52	449.94	9.56	1,225.45
5.52	6.11	7.56	462.65	9.60	1,242.94
5.56	9.41	7.60	475.47	9.64	1,260.51
5.60	13.15	7.64	488.41	9.68	1,278.16
5.64	17.28	7.68	501.46	9.72	1,295.88
5.68	21.77	7.72	514.63	9.76	1,313.69
5.72	26.60	7.76	527.90	9.80	1,331.56
5.76	31.73	7.80	541.28	9.84	1,349.52
5.80	37.16	7.84	554.77	9.88	1,367.55
5.84	42.86	7.88	568.36	9.92	1,385.65
5.88	48.83	7.92	582.06	9.96	1,403.83
5.92	55.05	7.96	595.87	10.00	1,422.09
5.96	61.51	8.00	609.78	10.04	1,440.41
6.00	68.21	8.04	623.79	10.08	1,458.82
6.04	75.13	8.08	637.91	10.12	1,477.29
6.08	82.26	8.12	652.13	10.16	1,495.84
6.12	89.61	8.16	666.44	10.20	1,514.46
6.16	97.17	8.20	680.86	10.24	1,533.15
6.20	104.92	8.24	695.38	10.28	1,551.91
6.24	112.86	8.28	709.99	10.32	1,570.75
6.28	121.00	8.32	724.71	10.36	1,589.65
6.32	129.32	8.36	739.51	10.40	1,608.63
6.36	137.82	8.40	754.42	10.44	1,627.67
6.40	146.50	8.44	769.42	10.48	1,646.79
6.44	155.35	8.48	784.51	10.52	1,665.97
6.48	164.36	8.52	799.70	10.56	1,685.23
6.52	173.55	8.56	814.98	10.60	1,704.55
6.56	182.90	8.60	830.36	10.64	1,723.94
6.60	192.40	8.64	845.82	10.68	1,743.40
6.64	202.07	8.68	861.38	10.72	1,762.93
6.68	211.88	8.72	877.02	10.76	1,782.53
6.72	221.85	8.76	892.76	10.80	1,802.19
6.76	231.97	8.80	908.59	10.84	1,821.92
6.80	242.24	8.84	924.50	10.88	1,841.72
6.84	252.65	8.88	940.50	10.92	1,861.58
6.88	263.20	8.92	956.59	10.96	1,881.51
6.92	273.89	8.96	972.77	11.00	1,901.50
6.96	284.72	9.00	989.03		
7.00	295.69	9.04	1,005.38		
7.04	306.80	9.08	1,021.81		
7.08	318.03	9.12	1,038.33		
7.12	329.40	9.16	1,054.93		
7.16	340.89	9.20	1,071.61		
7.20	352.52	9.24	1,088.38		
7.24	364.27	9.28	1,105.23		
7.28	376.14	9.32	1,122.16		
7.32	388.14	9.36	1,139.18		
7.36	400.26	9.40	1,156.27		
7.40	412.50	9.44	1,173.45		

Stage-Area-Storage for Pond LS: Level Spreader 1NPDES Outfall #2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
5.40	0	7.44	0	9.48	0
5.44	0	7.48	0	9.52	0
5.48	0	7.52	0	9.56	0
5.52	0	7.56	0	9.60	0
5.56	0	7.60	0	9.64	0
5.60	0	7.64	0	9.68	0
5.64	0	7.68	0	9.72	0
5.68	0	7.72	0	9.76	0
5.72	0	7.76	0	9.80	0
5.76	0	7.80	0	9.84	0
5.80	0	7.84	0	9.88	0
5.84	0	7.88	0	9.92	0
5.88	0	7.92	0	9.96	0
5.92	0	7.96	0	10.00	0
5.96	0	8.00	0	10.04	0
6.00	0	8.04	0	10.08	0
6.04	0	8.08	0	10.12	0
6.08	0	8.12	0	10.16	0
6.12	0	8.16	0	10.20	0
6.16	0	8.20	0	10.24	0
6.20	0	8.24	0	10.28	0
6.24	0	8.28	0	10.32	0
6.28	0	8.32	0	10.36	0
6.32	0	8.36	0	10.40	0
6.36	0	8.40	0	10.44	0
6.40	0	8.44	0	10.48	0
6.44	0	8.48	0	10.52	0
6.48	0	8.52	0	10.56	0
6.52	0	8.56	0	10.60	0
6.56	0	8.60	0	10.64	0
6.60	0	8.64	0	10.68	0
6.64	0	8.68	0	10.72	0
6.68	0	8.72	0	10.76	0
6.72	0	8.76	0	10.80	0
6.76	0	8.80	0	10.84	0
6.80	0	8.84	0	10.88	0
6.84	0	8.88	0	10.92	0
6.88	0	8.92	0	10.96	0
6.92	0	8.96	0	11.00	0
6.96	0	9.00	0		
7.00	0	9.04	0		
7.04	0	9.08	0		
7.08	0	9.12	0		
7.12	0	9.16	0		
7.16	0	9.20	0		
7.20	0	9.24	0		
7.24	0	9.28	0		
7.28	0	9.32	0		
7.32	0	9.36	0		
7.36	0	9.40	0		
7.40	0	9.44	0		

Summary for Pond LS-1: Level Spreader 1 NPDES Outfall #2

Inflow Area = 6.498 ac, 42.35% Impervious, Inflow Depth = 2.18" for Cv-10YR event
 Inflow = 3.48 cfs @ 12.96 hrs, Volume= 1.179 af
 Outflow = 3.48 cfs @ 12.96 hrs, Volume= 1.179 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.48 cfs @ 12.96 hrs, Volume= 1.179 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 5.48' @ 12.96 hrs

Flood Elev= 11.00'

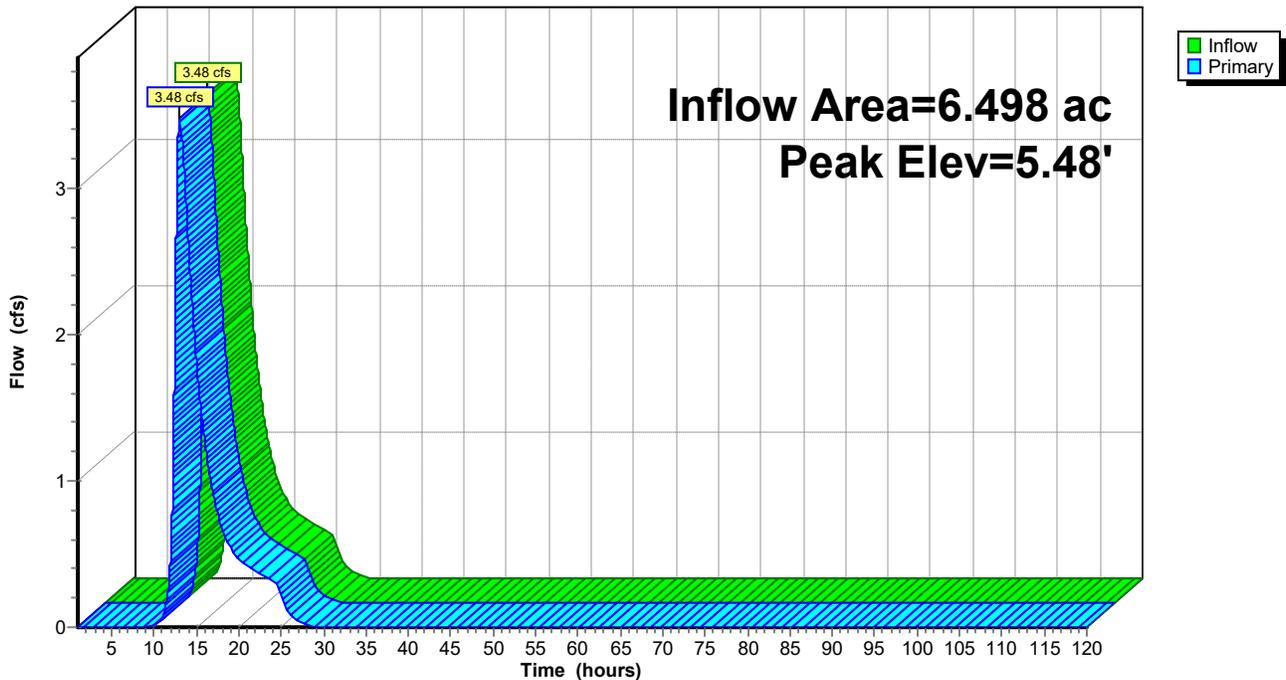
Device	Routing	Invert	Outlet Devices
#1	Primary	5.40'	45.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=3.48 cfs @ 12.96 hrs HW=5.48' (Free Discharge)

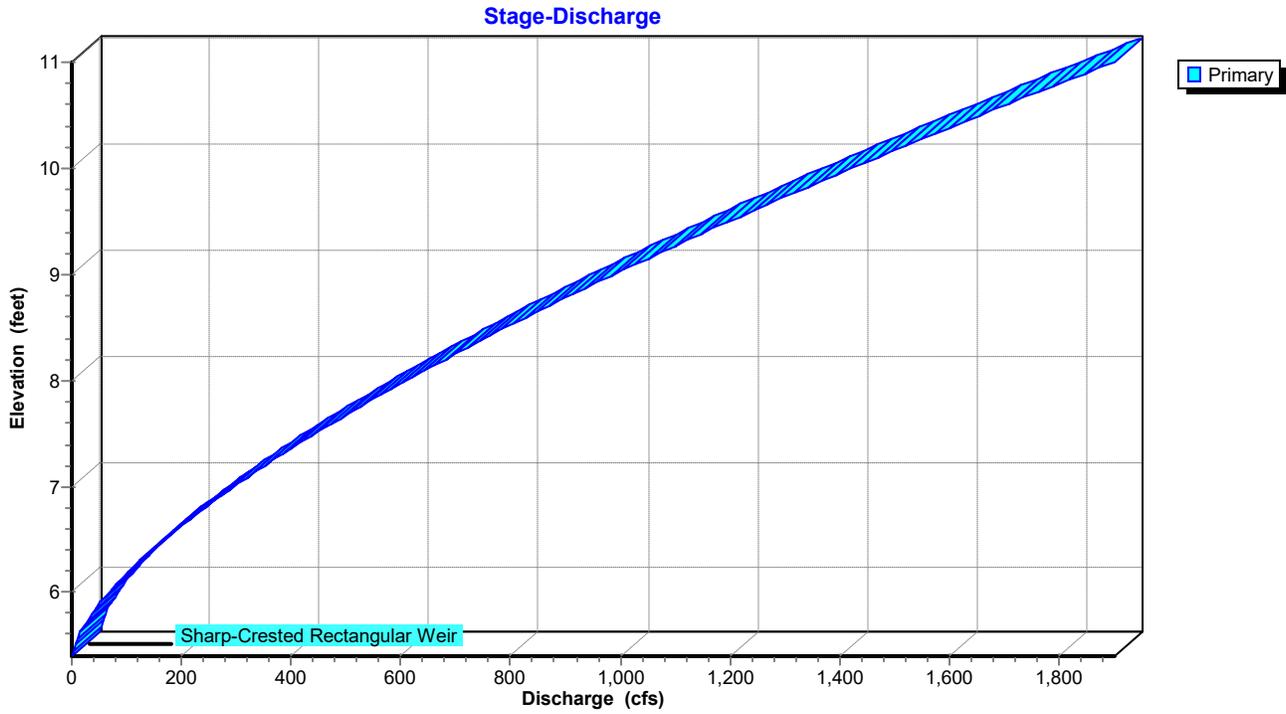
↳ Sharp-Crested Rectangular Weir (Weir Controls 3.48 cfs @ 0.94 fps)

Pond LS-1: Level Spreader 1 NPDES Outfall #2

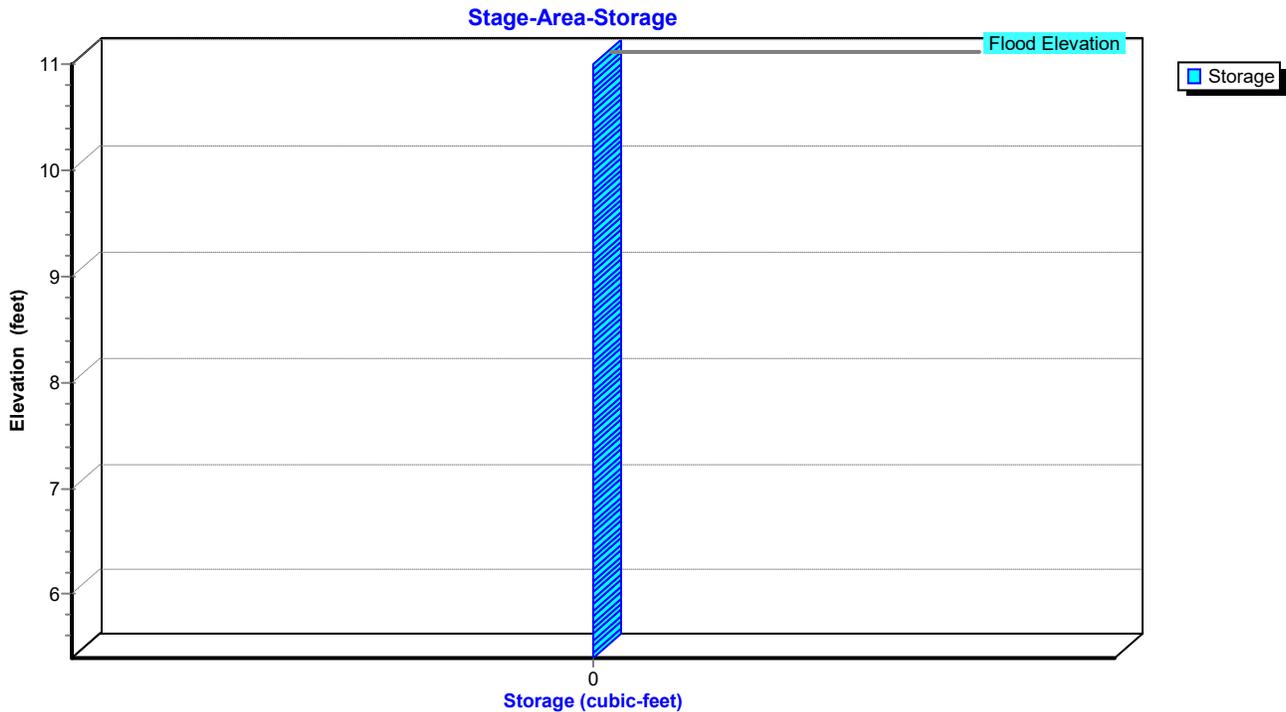
Hydrograph



Pond LS-1: Level Spreader 1 NPDES Outfall #2



Pond LS-1: Level Spreader 1 NPDES Outfall #2



Hydrograph for Pond LS-1: Level Spreader 1 NPDES Outfall #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	5.40	0.00	103.00	0.00	5.40	0.00
3.00	0.00	5.40	0.00	105.00	0.00	5.40	0.00
5.00	0.00	5.40	0.00	107.00	0.00	5.40	0.00
7.00	0.00	5.40	0.00	109.00	0.00	5.40	0.00
9.00	0.00	5.40	0.00	111.00	0.00	5.40	0.00
11.00	0.08	5.41	0.08	113.00	0.00	5.40	0.00
13.00	3.47	5.48	3.47	115.00	0.00	5.40	0.00
15.00	1.83	5.45	1.83	117.00	0.00	5.40	0.00
17.00	0.89	5.43	0.89	119.00	0.00	5.40	0.00
19.00	0.55	5.42	0.55				
21.00	0.42	5.42	0.42				
23.00	0.35	5.42	0.35				
25.00	0.21	5.41	0.21				
27.00	0.04	5.40	0.04				
29.00	0.00	5.40	0.00				
31.00	0.00	5.40	0.00				
33.00	0.00	5.40	0.00				
35.00	0.00	5.40	0.00				
37.00	0.00	5.40	0.00				
39.00	0.00	5.40	0.00				
41.00	0.00	5.40	0.00				
43.00	0.00	5.40	0.00				
45.00	0.00	5.40	0.00				
47.00	0.00	5.40	0.00				
49.00	0.00	5.40	0.00				
51.00	0.00	5.40	0.00				
53.00	0.00	5.40	0.00				
55.00	0.00	5.40	0.00				
57.00	0.00	5.40	0.00				
59.00	0.00	5.40	0.00				
61.00	0.00	5.40	0.00				
63.00	0.00	5.40	0.00				
65.00	0.00	5.40	0.00				
67.00	0.00	5.40	0.00				
69.00	0.00	5.40	0.00				
71.00	0.00	5.40	0.00				
73.00	0.00	5.40	0.00				
75.00	0.00	5.40	0.00				
77.00	0.00	5.40	0.00				
79.00	0.00	5.40	0.00				
81.00	0.00	5.40	0.00				
83.00	0.00	5.40	0.00				
85.00	0.00	5.40	0.00				
87.00	0.00	5.40	0.00				
89.00	0.00	5.40	0.00				
91.00	0.00	5.40	0.00				
93.00	0.00	5.40	0.00				
95.00	0.00	5.40	0.00				
97.00	0.00	5.40	0.00				
99.00	0.00	5.40	0.00				
101.00	0.00	5.40	0.00				

Stage-Discharge for Pond LS-1: Level Spreader 1 NPDES Outfall #2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
5.40	0.00	7.44	424.86	9.48	1,190.70
5.44	1.18	7.48	437.34	9.52	1,208.04
5.48	3.33	7.52	449.94	9.56	1,225.45
5.52	6.11	7.56	462.65	9.60	1,242.94
5.56	9.41	7.60	475.47	9.64	1,260.51
5.60	13.15	7.64	488.41	9.68	1,278.16
5.64	17.28	7.68	501.46	9.72	1,295.88
5.68	21.77	7.72	514.63	9.76	1,313.69
5.72	26.60	7.76	527.90	9.80	1,331.56
5.76	31.73	7.80	541.28	9.84	1,349.52
5.80	37.16	7.84	554.77	9.88	1,367.55
5.84	42.86	7.88	568.36	9.92	1,385.65
5.88	48.83	7.92	582.06	9.96	1,403.83
5.92	55.05	7.96	595.87	10.00	1,422.09
5.96	61.51	8.00	609.78	10.04	1,440.41
6.00	68.21	8.04	623.79	10.08	1,458.82
6.04	75.13	8.08	637.91	10.12	1,477.29
6.08	82.26	8.12	652.13	10.16	1,495.84
6.12	89.61	8.16	666.44	10.20	1,514.46
6.16	97.17	8.20	680.86	10.24	1,533.15
6.20	104.92	8.24	695.38	10.28	1,551.91
6.24	112.86	8.28	709.99	10.32	1,570.75
6.28	121.00	8.32	724.71	10.36	1,589.65
6.32	129.32	8.36	739.51	10.40	1,608.63
6.36	137.82	8.40	754.42	10.44	1,627.67
6.40	146.50	8.44	769.42	10.48	1,646.79
6.44	155.35	8.48	784.51	10.52	1,665.97
6.48	164.36	8.52	799.70	10.56	1,685.23
6.52	173.55	8.56	814.98	10.60	1,704.55
6.56	182.90	8.60	830.36	10.64	1,723.94
6.60	192.40	8.64	845.82	10.68	1,743.40
6.64	202.07	8.68	861.38	10.72	1,762.93
6.68	211.88	8.72	877.02	10.76	1,782.53
6.72	221.85	8.76	892.76	10.80	1,802.19
6.76	231.97	8.80	908.59	10.84	1,821.92
6.80	242.24	8.84	924.50	10.88	1,841.72
6.84	252.65	8.88	940.50	10.92	1,861.58
6.88	263.20	8.92	956.59	10.96	1,881.51
6.92	273.89	8.96	972.77	11.00	1,901.50
6.96	284.72	9.00	989.03		
7.00	295.69	9.04	1,005.38		
7.04	306.80	9.08	1,021.81		
7.08	318.03	9.12	1,038.33		
7.12	329.40	9.16	1,054.93		
7.16	340.89	9.20	1,071.61		
7.20	352.52	9.24	1,088.38		
7.24	364.27	9.28	1,105.23		
7.28	376.14	9.32	1,122.16		
7.32	388.14	9.36	1,139.18		
7.36	400.26	9.40	1,156.27		
7.40	412.50	9.44	1,173.45		

Stage-Area-Storage for Pond LS-1: Level Spreader 1 NPDES Outfall #2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
5.40	0	7.44	0	9.48	0
5.44	0	7.48	0	9.52	0
5.48	0	7.52	0	9.56	0
5.52	0	7.56	0	9.60	0
5.56	0	7.60	0	9.64	0
5.60	0	7.64	0	9.68	0
5.64	0	7.68	0	9.72	0
5.68	0	7.72	0	9.76	0
5.72	0	7.76	0	9.80	0
5.76	0	7.80	0	9.84	0
5.80	0	7.84	0	9.88	0
5.84	0	7.88	0	9.92	0
5.88	0	7.92	0	9.96	0
5.92	0	7.96	0	10.00	0
5.96	0	8.00	0	10.04	0
6.00	0	8.04	0	10.08	0
6.04	0	8.08	0	10.12	0
6.08	0	8.12	0	10.16	0
6.12	0	8.16	0	10.20	0
6.16	0	8.20	0	10.24	0
6.20	0	8.24	0	10.28	0
6.24	0	8.28	0	10.32	0
6.28	0	8.32	0	10.36	0
6.32	0	8.36	0	10.40	0
6.36	0	8.40	0	10.44	0
6.40	0	8.44	0	10.48	0
6.44	0	8.48	0	10.52	0
6.48	0	8.52	0	10.56	0
6.52	0	8.56	0	10.60	0
6.56	0	8.60	0	10.64	0
6.60	0	8.64	0	10.68	0
6.64	0	8.68	0	10.72	0
6.68	0	8.72	0	10.76	0
6.72	0	8.76	0	10.80	0
6.76	0	8.80	0	10.84	0
6.80	0	8.84	0	10.88	0
6.84	0	8.88	0	10.92	0
6.88	0	8.92	0	10.96	0
6.92	0	8.96	0	11.00	0
6.96	0	9.00	0		
7.00	0	9.04	0		
7.04	0	9.08	0		
7.08	0	9.12	0		
7.12	0	9.16	0		
7.16	0	9.20	0		
7.20	0	9.24	0		
7.24	0	9.28	0		
7.28	0	9.32	0		
7.32	0	9.36	0		
7.36	0	9.40	0		
7.40	0	9.44	0		

Summary for Pond P-1: Compost Building

Inflow Area = 2.179 ac, 62.17% Impervious, Inflow Depth = 3.55" for Cv-10YR event
 Inflow = 7.80 cfs @ 12.13 hrs, Volume= 0.644 af
 Outflow = 6.85 cfs @ 12.17 hrs, Volume= 0.644 af, Atten= 12%, Lag= 2.3 min
 Primary = 6.85 cfs @ 12.17 hrs, Volume= 0.644 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 8.66' @ 12.17 hrs Surf.Area= 3,448 sf Storage= 1,137 cf

Plug-Flow detention time= 1.6 min calculated for 0.644 af (100% of inflow)
 Center-of-Mass det. time= 1.6 min (819.0 - 817.4)

Volume	Invert	Avail.Storage	Storage Description
#1	8.00'	12,294 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.00	10	0	0
9.00	5,235	2,623	2,623
9.50	18,583	5,955	8,577
9.70	18,583	3,717	12,294

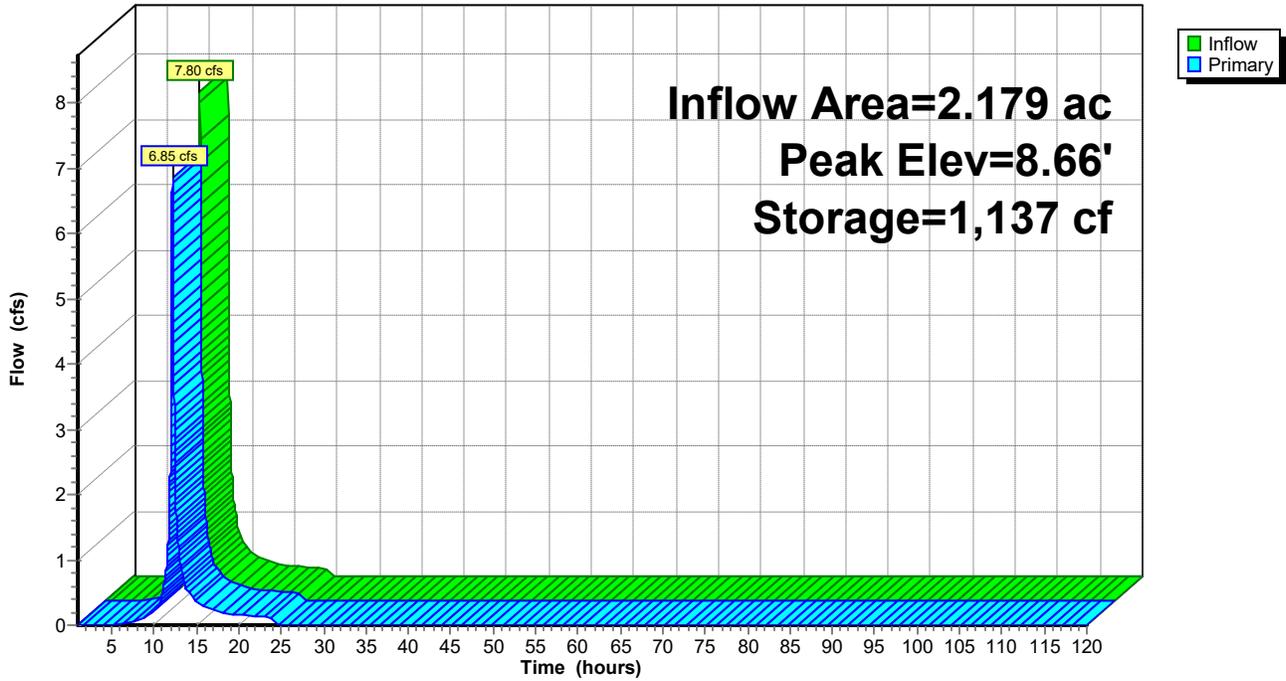
Device	Routing	Invert	Outlet Devices
#1	Primary	8.00'	48.0" W x 24.0" H Box Culvert L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.00' / 7.50' S= 0.0109 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 8.00 sf
#2	Primary	9.50'	200.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.85 cfs @ 12.17 hrs HW=8.66' TW=5.97' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 6.85 cfs @ 2.60 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

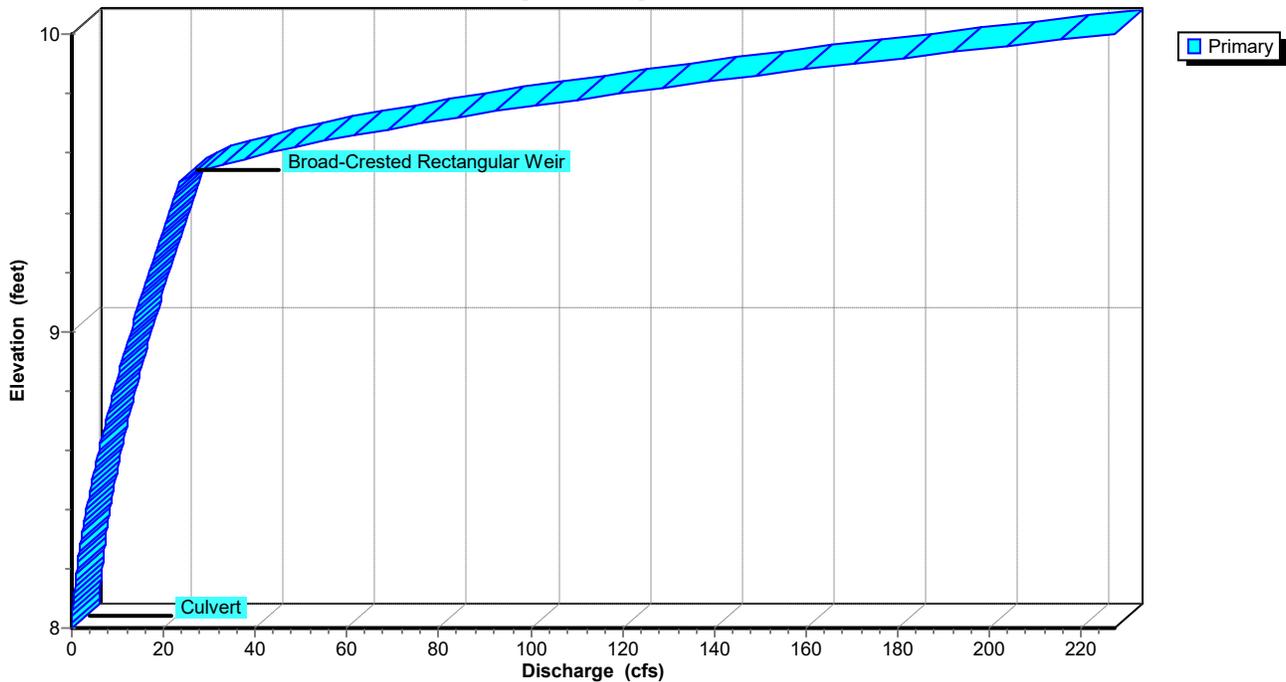
Pond P-1: Compost Building

Hydrograph

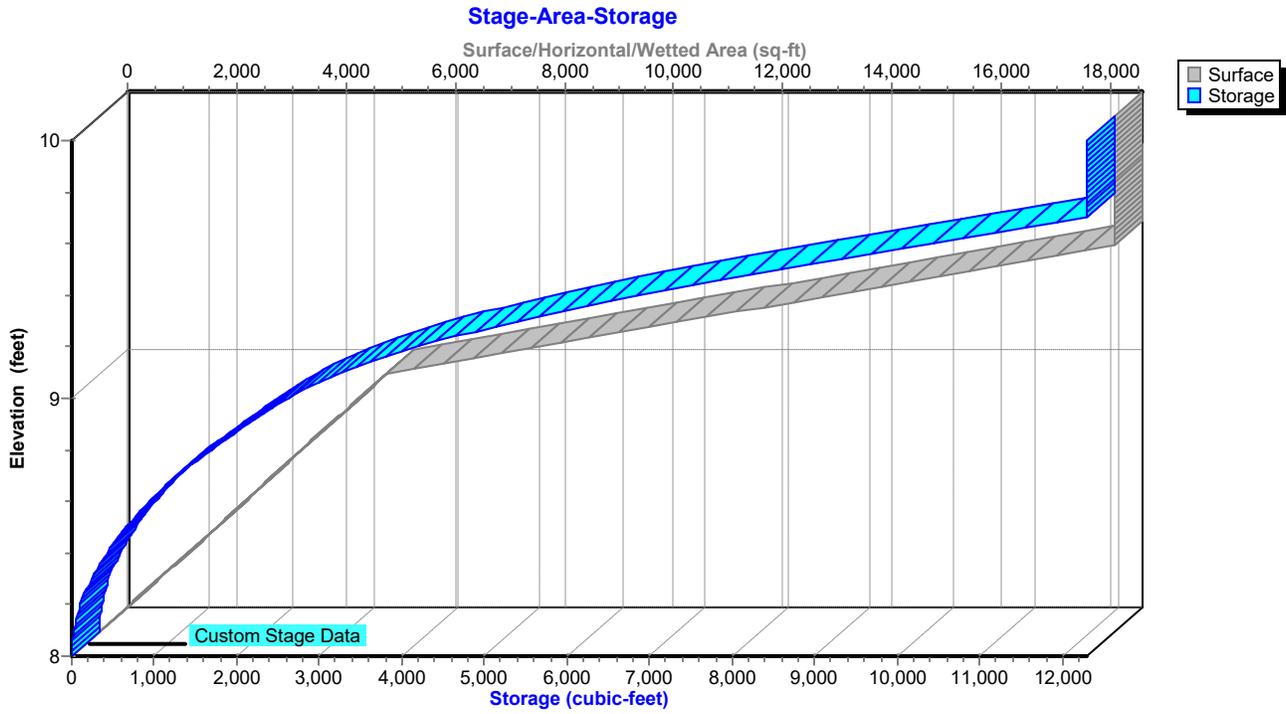


Pond P-1: Compost Building

Stage-Discharge



Pond P-1: Compost Building



Hydrograph for Pond P-1: Compost Building

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	8.00	0.00	103.00	0.00	0	8.00	0.00
3.00	0.00	0	8.00	0.00	105.00	0.00	0	8.00	0.00
5.00	0.00	0	8.00	0.00	107.00	0.00	0	8.00	0.00
7.00	0.04	1	8.02	0.04	109.00	0.00	0	8.00	0.00
9.00	0.12	6	8.04	0.12	111.00	0.00	0	8.00	0.00
11.00	0.51	36	8.11	0.50	113.00	0.00	0	8.00	0.00
13.00	1.03	96	8.19	1.06	115.00	0.00	0	8.00	0.00
15.00	0.35	23	8.09	0.35	117.00	0.00	0	8.00	0.00
17.00	0.24	14	8.07	0.24	119.00	0.00	0	8.00	0.00
19.00	0.18	9	8.06	0.18					
21.00	0.15	8	8.05	0.15					
23.00	0.13	6	8.05	0.13					
25.00	0.00	0	8.00	0.00					
27.00	0.00	0	8.00	0.00					
29.00	0.00	0	8.00	0.00					
31.00	0.00	0	8.00	0.00					
33.00	0.00	0	8.00	0.00					
35.00	0.00	0	8.00	0.00					
37.00	0.00	0	8.00	0.00					
39.00	0.00	0	8.00	0.00					
41.00	0.00	0	8.00	0.00					
43.00	0.00	0	8.00	0.00					
45.00	0.00	0	8.00	0.00					
47.00	0.00	0	8.00	0.00					
49.00	0.00	0	8.00	0.00					
51.00	0.00	0	8.00	0.00					
53.00	0.00	0	8.00	0.00					
55.00	0.00	0	8.00	0.00					
57.00	0.00	0	8.00	0.00					
59.00	0.00	0	8.00	0.00					
61.00	0.00	0	8.00	0.00					
63.00	0.00	0	8.00	0.00					
65.00	0.00	0	8.00	0.00					
67.00	0.00	0	8.00	0.00					
69.00	0.00	0	8.00	0.00					
71.00	0.00	0	8.00	0.00					
73.00	0.00	0	8.00	0.00					
75.00	0.00	0	8.00	0.00					
77.00	0.00	0	8.00	0.00					
79.00	0.00	0	8.00	0.00					
81.00	0.00	0	8.00	0.00					
83.00	0.00	0	8.00	0.00					
85.00	0.00	0	8.00	0.00					
87.00	0.00	0	8.00	0.00					
89.00	0.00	0	8.00	0.00					
91.00	0.00	0	8.00	0.00					
93.00	0.00	0	8.00	0.00					
95.00	0.00	0	8.00	0.00					
97.00	0.00	0	8.00	0.00					
99.00	0.00	0	8.00	0.00					
101.00	0.00	0	8.00	0.00					

Stage-Discharge for Pond P-1: Compost Building

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
8.00	0.00	8.51	4.68	9.02	13.23	9.53	27.08
8.01	0.01	8.52	4.81	9.03	13.42	9.54	28.83
8.02	0.04	8.53	4.95	9.04	13.62	9.55	30.77
8.03	0.07	8.54	5.10	9.05	13.81	9.56	32.90
8.04	0.10	8.55	5.24	9.06	14.01	9.57	35.19
8.05	0.14	8.56	5.38	9.07	14.21	9.58	37.63
8.06	0.19	8.57	5.53	9.08	14.41	9.59	40.21
8.07	0.24	8.58	5.67	9.09	14.61	9.60	42.94
8.08	0.29	8.59	5.82	9.10	14.81	9.61	45.79
8.09	0.35	8.60	5.97	9.11	15.02	9.62	48.76
8.10	0.41	8.61	6.12	9.12	15.22	9.63	51.84
8.11	0.47	8.62	6.27	9.13	15.42	9.64	55.04
8.12	0.53	8.63	6.42	9.14	15.63	9.65	58.35
8.13	0.60	8.64	6.57	9.15	15.83	9.66	61.77
8.14	0.67	8.65	6.73	9.16	16.04	9.67	65.28
8.15	0.75	8.66	6.88	9.17	16.25	9.68	68.89
8.16	0.82	8.67	7.04	9.18	16.46	9.69	72.60
8.17	0.90	8.68	7.20	9.19	16.67	9.70	76.40
8.18	0.98	8.69	7.36	9.20	16.88	9.71	80.31
8.19	1.06	8.70	7.52	9.21	17.09	9.72	84.31
8.20	1.15	8.71	7.68	9.22	17.30	9.73	88.41
8.21	1.24	8.72	7.84	9.23	17.52	9.74	92.58
8.22	1.32	8.73	8.01	9.24	17.73	9.75	96.85
8.23	1.42	8.74	8.17	9.25	17.94	9.76	101.20
8.24	1.51	8.75	8.34	9.26	18.16	9.77	105.63
8.25	1.60	8.76	8.51	9.27	18.38	9.78	110.14
8.26	1.70	8.77	8.68	9.28	18.59	9.79	114.74
8.27	1.80	8.78	8.85	9.29	18.81	9.80	119.41
8.28	1.90	8.79	9.02	9.30	19.03	9.81	124.16
8.29	2.01	8.80	9.19	9.31	19.25	9.82	128.99
8.30	2.11	8.81	9.36	9.32	19.47	9.83	133.89
8.31	2.22	8.82	9.53	9.33	19.69	9.84	138.87
8.32	2.32	8.83	9.71	9.34	19.92	9.85	143.92
8.33	2.43	8.84	9.89	9.35	20.14	9.86	149.04
8.34	2.55	8.85	10.06	9.36	20.36	9.87	154.23
8.35	2.66	8.86	10.24	9.37	20.59	9.88	159.50
8.36	2.77	8.87	10.42	9.38	20.82	9.89	164.83
8.37	2.89	8.88	10.60	9.39	21.04	9.90	170.24
8.38	3.01	8.89	10.78	9.40	21.27	9.91	175.66
8.39	3.13	8.90	10.96	9.41	21.50	9.92	181.14
8.40	3.25	8.91	11.15	9.42	21.73	9.93	186.69
8.41	3.37	8.92	11.33	9.43	21.96	9.94	192.30
8.42	3.49	8.93	11.52	9.44	22.19	9.95	197.97
8.43	3.62	8.94	11.70	9.45	22.42	9.96	203.71
8.44	3.75	8.95	11.89	9.46	22.65	9.97	209.50
8.45	3.88	8.96	12.08	9.47	22.88	9.98	215.35
8.46	4.01	8.97	12.27	9.48	23.12	9.99	221.26
8.47	4.14	8.98	12.46	9.49	23.35	10.00	227.24
8.48	4.27	8.99	12.65	9.50	23.59		
8.49	4.40	9.00	12.84	9.51	24.36		
8.50	4.54	9.01	13.03	9.52	25.58		

Stage-Area-Storage for Pond P-1: Compost Building

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
8.00	10	0	9.02	5,769	2,733
8.02	114	1	9.04	6,303	2,853
8.04	219	5	9.06	6,837	2,985
8.06	324	10	9.08	7,371	3,127
8.08	428	18	9.10	7,905	3,279
8.10	532	27	9.12	8,439	3,443
8.12	637	39	9.14	8,972	3,617
8.14	742	53	9.16	9,506	3,802
8.16	846	68	9.18	10,040	3,997
8.18	950	86	9.20	10,574	4,203
8.20	1,055	106	9.22	11,108	4,420
8.22	1,160	129	9.24	11,642	4,648
8.24	1,264	153	9.26	12,176	4,886
8.26	1,368	179	9.28	12,710	5,135
8.28	1,473	208	9.30	13,244	5,394
8.30	1,578	238	9.32	13,778	5,665
8.32	1,682	271	9.34	14,312	5,945
8.34	1,786	305	9.36	14,846	6,237
8.36	1,891	342	9.38	15,379	6,539
8.38	1,996	381	9.40	15,913	6,852
8.40	2,100	422	9.42	16,447	7,176
8.42	2,204	465	9.44	16,981	7,510
8.44	2,309	510	9.46	17,515	7,855
8.46	2,414	557	9.48	18,049	8,211
8.48	2,518	607	9.50	18,583	8,577
8.50	2,623	658	9.52	18,583	8,949
8.52	2,727	712	9.54	18,583	9,320
8.54	2,831	767	9.56	18,583	9,692
8.56	2,936	825	9.58	18,583	10,064
8.58	3,041	885	9.60	18,583	10,435
8.60	3,145	946	9.62	18,583	10,807
8.62	3,249	1,010	9.64	18,583	11,179
8.64	3,354	1,076	9.66	18,583	11,550
8.66	3,459	1,145	9.68	18,583	11,922
8.68	3,563	1,215	9.70	18,583	12,294
8.70	3,667	1,287	9.72	18,583	12,294
8.72	3,772	1,362	9.74	18,583	12,294
8.74	3,877	1,438	9.76	18,583	12,294
8.76	3,981	1,517	9.78	18,583	12,294
8.78	4,085	1,597	9.80	18,583	12,294
8.80	4,190	1,680	9.82	18,583	12,294
8.82	4,295	1,765	9.84	18,583	12,294
8.84	4,399	1,852	9.86	18,583	12,294
8.86	4,503	1,941	9.88	18,583	12,294
8.88	4,608	2,032	9.90	18,583	12,294
8.90	4,713	2,125	9.92	18,583	12,294
8.92	4,817	2,220	9.94	18,583	12,294
8.94	4,921	2,318	9.96	18,583	12,294
8.96	5,026	2,417	9.98	18,583	12,294
8.98	5,131	2,519	10.00	18,583	12,294
9.00	5,235	2,623			

Summary for Pond SGWs: SGW-Combo

Inflow Area = 10.978 ac, 56.54% Impervious, Inflow Depth = 3.35" for Cv-10YR event
 Inflow = 31.50 cfs @ 12.16 hrs, Volume= 3.062 af
 Outflow = 27.49 cfs @ 12.24 hrs, Volume= 3.062 af, Atten= 13%, Lag= 4.5 min
 Primary = 27.49 cfs @ 12.24 hrs, Volume= 3.062 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 5.74' @ 12.24 hrs Surf.Area= 22,866 sf Storage= 22,295 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 61.4 min (931.9 - 870.5)

Volume	Invert	Avail.Storage	Storage Description
#1	4.50'	41,820 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.50	10,502	0	0
5.00	18,280	7,196	7,196
5.50	21,308	9,897	17,093
6.00	24,615	11,481	28,573
6.50	28,370	13,246	41,820

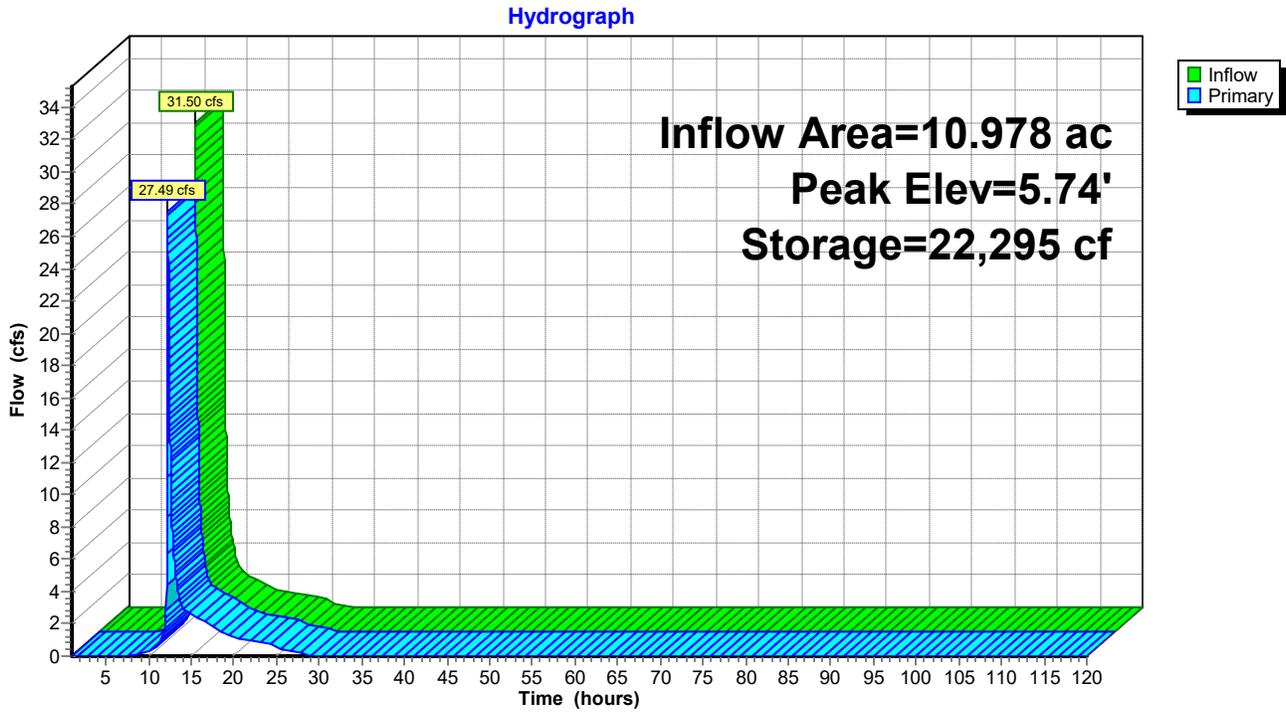
Device	Routing	Invert	Outlet Devices
#1	Primary	4.30'	12.0" Round Culvert L= 19.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.30' / 4.13' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	5.45'	65.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=27.47 cfs @ 12.24 hrs HW=5.74' (Free Discharge)

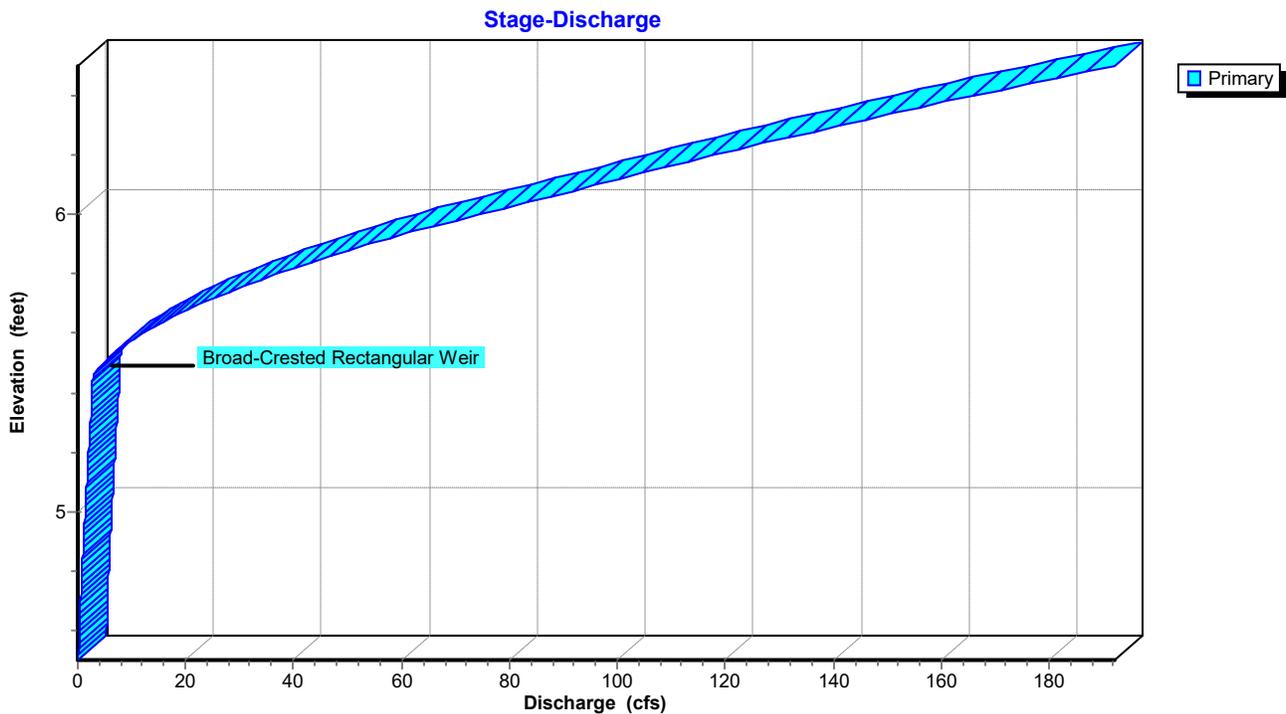
1=Culvert (Barrel Controls 3.39 cfs @ 4.31 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 24.09 cfs @ 1.30 fps)

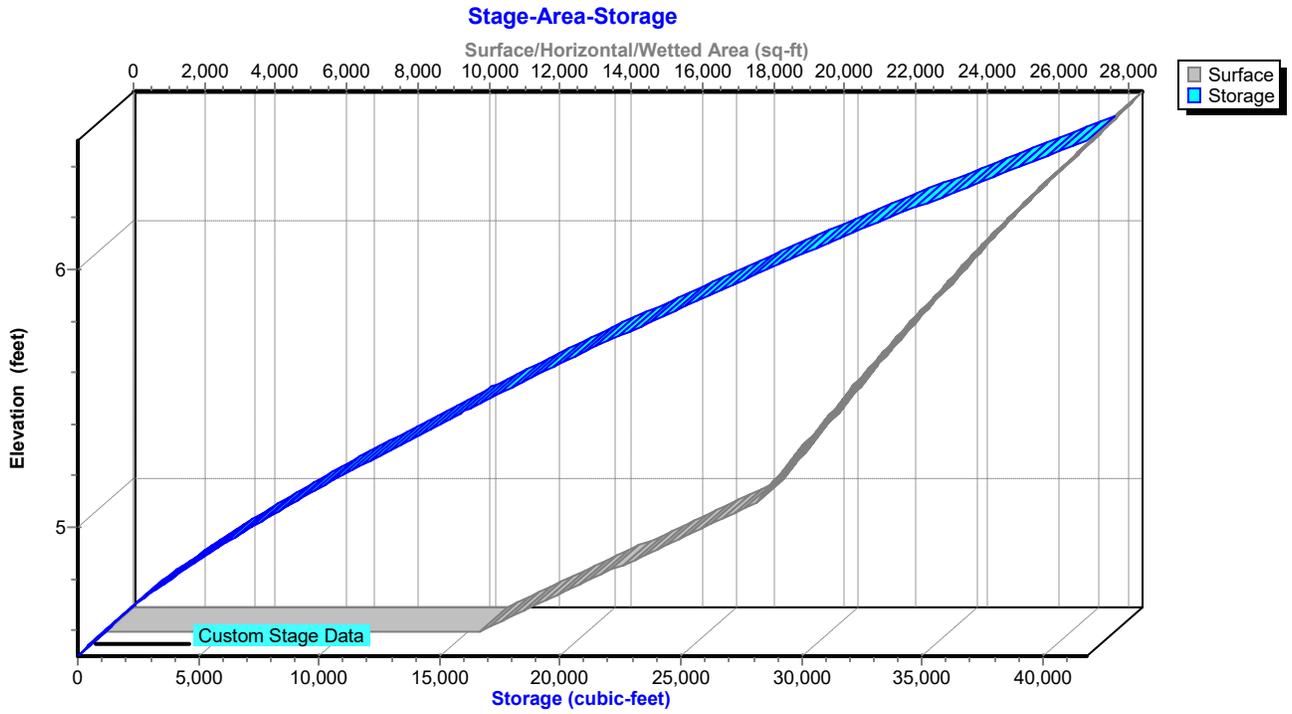
Pond SGWs: SGW-Combo



Pond SGWs: SGW-Combo



Pond SGWs: SGW-Combo



Hydrograph for Pond SGWs: SGW-Combo

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.50	0.00	103.00	0.00	0	4.50	0.00
3.00	0.00	0	4.50	0.00	105.00	0.00	0	4.50	0.00
5.00	0.00	0	4.50	0.00	107.00	0.00	0	4.50	0.00
7.00	0.00	0	4.50	0.00	109.00	0.00	0	4.50	0.00
9.00	0.25	77	4.51	0.15	111.00	0.00	0	4.50	0.00
11.00	1.49	2,876	4.73	0.60	113.00	0.00	0	4.50	0.00
13.00	5.49	17,601	5.52	6.06	115.00	0.00	0	4.50	0.00
15.00	2.11	14,879	5.39	2.63	117.00	0.00	0	4.50	0.00
17.00	1.47	10,780	5.19	1.99	119.00	0.00	0	4.50	0.00
19.00	1.03	7,437	5.01	1.41					
21.00	0.84	5,385	4.90	1.05					
23.00	0.70	4,193	4.82	0.84					
25.00	0.24	2,782	4.73	0.59					
27.00	0.07	821	4.57	0.26					
29.00	0.03	0	4.50	0.00					
31.00	0.02	0	4.50	0.00					
33.00	0.01	0	4.50	0.00					
35.00	0.01	0	4.50	0.00					
37.00	0.00	0	4.50	0.00					
39.00	0.00	0	4.50	0.00					
41.00	0.00	0	4.50	0.00					
43.00	0.00	0	4.50	0.00					
45.00	0.00	0	4.50	0.00					
47.00	0.00	0	4.50	0.00					
49.00	0.00	0	4.50	0.00					
51.00	0.00	0	4.50	0.00					
53.00	0.00	0	4.50	0.00					
55.00	0.00	0	4.50	0.00					
57.00	0.00	0	4.50	0.00					
59.00	0.00	0	4.50	0.00					
61.00	0.00	0	4.50	0.00					
63.00	0.00	0	4.50	0.00					
65.00	0.00	0	4.50	0.00					
67.00	0.00	0	4.50	0.00					
69.00	0.00	0	4.50	0.00					
71.00	0.00	0	4.50	0.00					
73.00	0.00	0	4.50	0.00					
75.00	0.00	0	4.50	0.00					
77.00	0.00	0	4.50	0.00					
79.00	0.00	0	4.50	0.00					
81.00	0.00	0	4.50	0.00					
83.00	0.00	0	4.50	0.00					
85.00	0.00	0	4.50	0.00					
87.00	0.00	0	4.50	0.00					
89.00	0.00	0	4.50	0.00					
91.00	0.00	0	4.50	0.00					
93.00	0.00	0	4.50	0.00					
95.00	0.00	0	4.50	0.00					
97.00	0.00	0	4.50	0.00					
99.00	0.00	0	4.50	0.00					
101.00	0.00	0	4.50	0.00					

Stage-Discharge for Pond SGWs: SGW-Combo

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
4.50	0.00	5.01	1.40	5.52	5.82	6.03	81.10
4.51	0.16	5.02	1.43	5.53	6.47	6.04	83.41
4.52	0.17	5.03	1.46	5.54	7.16	6.05	85.74
4.53	0.19	5.04	1.50	5.55	7.89	6.06	87.78
4.54	0.20	5.05	1.53	5.56	8.66	6.07	89.83
4.55	0.22	5.06	1.56	5.57	9.46	6.08	91.90
4.56	0.24	5.07	1.59	5.58	10.29	6.09	93.99
4.57	0.25	5.08	1.63	5.59	11.16	6.10	96.09
4.58	0.27	5.09	1.66	5.60	12.05	6.11	98.20
4.59	0.29	5.10	1.69	5.61	12.96	6.12	100.33
4.60	0.31	5.11	1.72	5.62	13.91	6.13	102.47
4.61	0.33	5.12	1.76	5.63	14.87	6.14	104.63
4.62	0.35	5.13	1.79	5.64	15.87	6.15	106.80
4.63	0.37	5.14	1.82	5.65	16.92	6.16	108.98
4.64	0.39	5.15	1.85	5.66	18.04	6.17	111.17
4.65	0.41	5.16	1.89	5.67	19.19	6.18	113.38
4.66	0.43	5.17	1.92	5.68	20.37	6.19	115.60
4.67	0.46	5.18	1.95	5.69	21.58	6.20	117.83
4.68	0.48	5.19	1.99	5.70	22.83	6.21	120.08
4.69	0.50	5.20	2.02	5.71	24.10	6.22	122.34
4.70	0.52	5.21	2.05	5.72	25.40	6.23	124.61
4.71	0.55	5.22	2.09	5.73	26.74	6.24	126.90
4.72	0.57	5.23	2.12	5.74	28.10	6.25	129.20
4.73	0.60	5.24	2.15	5.75	29.49	6.26	131.56
4.74	0.62	5.25	2.18	5.76	30.91	6.27	133.94
4.75	0.65	5.26	2.22	5.77	32.36	6.28	136.32
4.76	0.67	5.27	2.25	5.78	33.83	6.29	138.73
4.77	0.70	5.28	2.28	5.79	35.34	6.30	141.15
4.78	0.72	5.29	2.31	5.80	36.87	6.31	143.58
4.79	0.75	5.30	2.34	5.81	38.44	6.32	146.02
4.80	0.78	5.31	2.38	5.82	40.03	6.33	148.48
4.81	0.80	5.32	2.41	5.83	41.65	6.34	150.96
4.82	0.83	5.33	2.44	5.84	43.29	6.35	153.44
4.83	0.86	5.34	2.47	5.85	44.97	6.36	155.94
4.84	0.89	5.35	2.50	5.86	46.71	6.37	158.46
4.85	0.91	5.36	2.53	5.87	48.49	6.38	160.99
4.86	0.94	5.37	2.56	5.88	50.30	6.39	163.53
4.87	0.97	5.38	2.59	5.89	52.13	6.40	166.08
4.88	1.00	5.39	2.62	5.90	54.00	6.41	168.65
4.89	1.03	5.40	2.65	5.91	55.90	6.42	171.23
4.90	1.06	5.41	2.68	5.92	57.83	6.43	173.83
4.91	1.09	5.42	2.71	5.93	59.79	6.44	176.44
4.92	1.12	5.43	2.74	5.94	61.78	6.45	179.06
4.93	1.15	5.44	2.76	5.95	63.81	6.46	181.66
4.94	1.18	5.45	2.79	5.96	65.86	6.47	184.27
4.95	1.21	5.46	2.97	5.97	67.95	6.48	186.90
4.96	1.24	5.47	3.28	5.98	70.06	6.49	189.53
4.97	1.27	5.48	3.67	5.99	72.21	6.50	192.18
4.98	1.30	5.49	4.13	6.00	74.39		
4.99	1.34	5.50	4.64	6.01	76.59		
5.00	1.37	5.51	5.20	6.02	78.83		

Stage-Area-Storage for Pond SGWs: SGW-Combo

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.50	10,502	0	5.52	21,440	17,520
4.52	10,813	213	5.54	21,573	17,950
4.54	11,124	433	5.56	21,705	18,383
4.56	11,435	658	5.58	21,837	18,818
4.58	11,746	890	5.60	21,969	19,256
4.60	12,058	1,128	5.62	22,102	19,697
4.62	12,369	1,372	5.64	22,234	20,140
4.64	12,680	1,623	5.66	22,366	20,586
4.66	12,991	1,879	5.68	22,499	21,035
4.68	13,302	2,142	5.70	22,631	21,486
4.70	13,613	2,412	5.72	22,763	21,940
4.72	13,924	2,687	5.74	22,895	22,397
4.74	14,235	2,968	5.76	23,028	22,856
4.76	14,547	3,256	5.78	23,160	23,318
4.78	14,858	3,550	5.80	23,292	23,783
4.80	15,169	3,851	5.82	23,424	24,250
4.82	15,480	4,157	5.84	23,557	24,720
4.84	15,791	4,470	5.86	23,689	25,192
4.86	16,102	4,789	5.88	23,821	25,667
4.88	16,413	5,114	5.90	23,954	26,145
4.90	16,724	5,445	5.92	24,086	26,625
4.92	17,036	5,783	5.94	24,218	27,108
4.94	17,347	6,127	5.96	24,350	27,594
4.96	17,658	6,477	5.98	24,483	28,082
4.98	17,969	6,833	6.00	24,615	28,573
5.00	18,280	7,196	6.02	24,765	29,067
5.02	18,401	7,562	6.04	24,915	29,564
5.04	18,522	7,932	6.06	25,066	30,064
5.06	18,643	8,303	6.08	25,216	30,566
5.08	18,764	8,677	6.10	25,366	31,072
5.10	18,886	9,054	6.12	25,516	31,581
5.12	19,007	9,433	6.14	25,666	32,093
5.14	19,128	9,814	6.16	25,817	32,608
5.16	19,249	10,198	6.18	25,967	33,126
5.18	19,370	10,584	6.20	26,117	33,646
5.20	19,491	10,973	6.22	26,267	34,170
5.22	19,612	11,364	6.24	26,417	34,697
5.24	19,733	11,757	6.26	26,568	35,227
5.26	19,855	12,153	6.28	26,718	35,760
5.28	19,976	12,551	6.30	26,868	36,296
5.30	20,097	12,952	6.32	27,018	36,835
5.32	20,218	13,355	6.34	27,168	37,376
5.34	20,339	13,761	6.36	27,319	37,921
5.36	20,460	14,169	6.38	27,469	38,469
5.38	20,581	14,579	6.40	27,619	39,020
5.40	20,702	14,992	6.42	27,769	39,574
5.42	20,824	15,407	6.44	27,919	40,131
5.44	20,945	15,825	6.46	28,070	40,691
5.46	21,066	16,245	6.48	28,220	41,254
5.48	21,187	16,668	6.50	28,370	41,820
5.50	21,308	17,093			

Summary for Subcatchment 1a-1: PDA-1a-1

Runoff = 14.98 cfs @ 12.13 hrs, Volume= 1.275 af, Depth= 7.13"

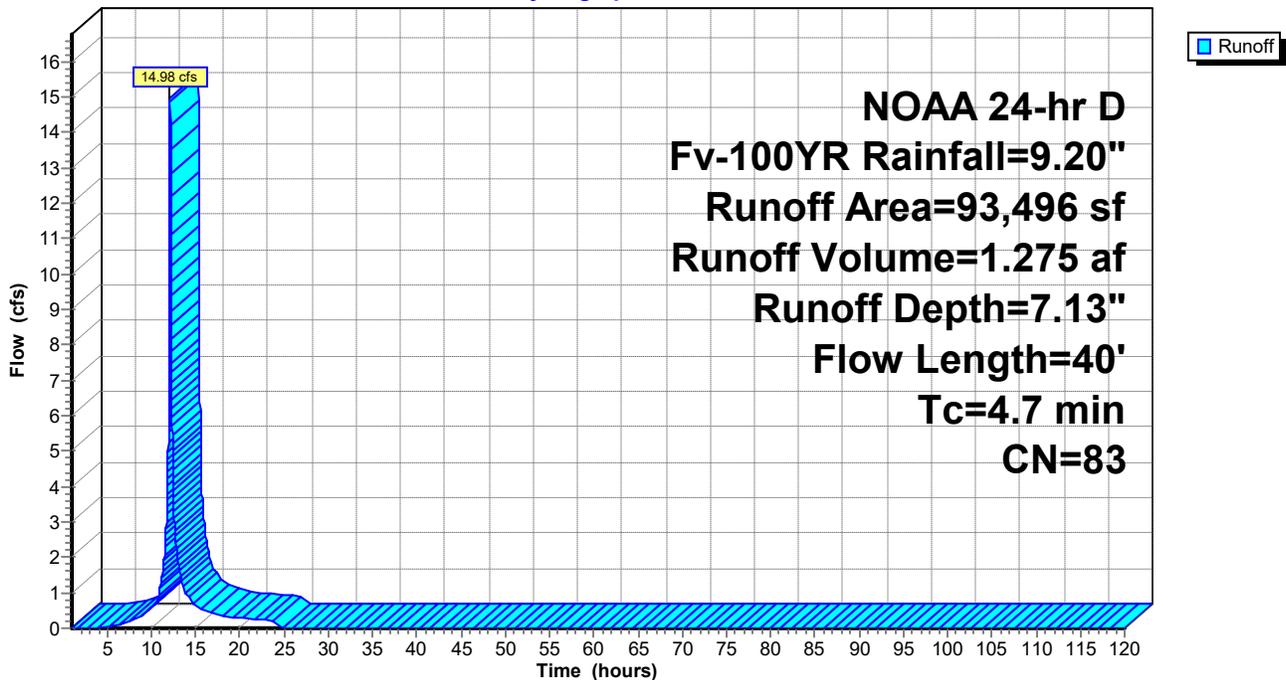
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span=1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
* 51,584	98	Roadway & Parking
* 513	98	Office Roof
* 6,404	73	SGW-2 @ 5.5-wetland-D
* 3,625	73	Forebay 1 @ 5.5 Wetland D
31,370	61	>75% Grass cover, Good, HSG B
93,496	83	Weighted Average
41,399		44.28% Pervious Area
52,097		55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	30	0.0270	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
0.0	10	0.2200	7.04		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.7	40	Total			

Subcatchment 1a-1: PDA-1a-1

Hydrograph



Hydrograph for Subcatchment 1a-1: PDA-1a-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	7.13	0.00	103.00	9.20	7.13	0.00
2.00	0.22	0.00	0.00	53.00	9.20	7.13	0.00	104.00	9.20	7.13	0.00
3.00	0.35	0.00	0.00	54.00	9.20	7.13	0.00	105.00	9.20	7.13	0.00
4.00	0.48	0.00	0.02	55.00	9.20	7.13	0.00	106.00	9.20	7.13	0.00
5.00	0.63	0.02	0.06	56.00	9.20	7.13	0.00	107.00	9.20	7.13	0.00
6.00	0.79	0.06	0.10	57.00	9.20	7.13	0.00	108.00	9.20	7.13	0.00
7.00	0.97	0.12	0.16	58.00	9.20	7.13	0.00	109.00	9.20	7.13	0.00
8.00	1.19	0.22	0.24	59.00	9.20	7.13	0.00	110.00	9.20	7.13	0.00
9.00	1.46	0.36	0.34	60.00	9.20	7.13	0.00	111.00	9.20	7.13	0.00
10.00	1.82	0.58	0.58	61.00	9.20	7.13	0.00	112.00	9.20	7.13	0.00
11.00	2.39	0.97	1.16	62.00	9.20	7.13	0.00	113.00	9.20	7.13	0.00
12.00	4.41	2.64	8.23	63.00	9.20	7.13	0.00	114.00	9.20	7.13	0.00
13.00	6.81	4.85	1.89	64.00	9.20	7.13	0.00	115.00	9.20	7.13	0.00
14.00	7.38	5.38	0.93	65.00	9.20	7.13	0.00	116.00	9.20	7.13	0.00
15.00	7.74	5.73	0.64	66.00	9.20	7.13	0.00	117.00	9.20	7.13	0.00
16.00	8.01	5.98	0.52	67.00	9.20	7.13	0.00	118.00	9.20	7.13	0.00
17.00	8.23	6.20	0.43	68.00	9.20	7.13	0.00	119.00	9.20	7.13	0.00
18.00	8.41	6.37	0.35	69.00	9.20	7.13	0.00	120.00	9.20	7.13	0.00
19.00	8.57	6.52	0.32	70.00	9.20	7.13	0.00				
20.00	8.72	6.66	0.30	71.00	9.20	7.13	0.00				
21.00	8.85	6.80	0.28	72.00	9.20	7.13	0.00				
22.00	8.98	6.92	0.25	73.00	9.20	7.13	0.00				
23.00	9.09	7.03	0.23	74.00	9.20	7.13	0.00				
24.00	9.20	7.13	0.21	75.00	9.20	7.13	0.00				
25.00	9.20	7.13	0.00	76.00	9.20	7.13	0.00				
26.00	9.20	7.13	0.00	77.00	9.20	7.13	0.00				
27.00	9.20	7.13	0.00	78.00	9.20	7.13	0.00				
28.00	9.20	7.13	0.00	79.00	9.20	7.13	0.00				
29.00	9.20	7.13	0.00	80.00	9.20	7.13	0.00				
30.00	9.20	7.13	0.00	81.00	9.20	7.13	0.00				
31.00	9.20	7.13	0.00	82.00	9.20	7.13	0.00				
32.00	9.20	7.13	0.00	83.00	9.20	7.13	0.00				
33.00	9.20	7.13	0.00	84.00	9.20	7.13	0.00				
34.00	9.20	7.13	0.00	85.00	9.20	7.13	0.00				
35.00	9.20	7.13	0.00	86.00	9.20	7.13	0.00				
36.00	9.20	7.13	0.00	87.00	9.20	7.13	0.00				
37.00	9.20	7.13	0.00	88.00	9.20	7.13	0.00				
38.00	9.20	7.13	0.00	89.00	9.20	7.13	0.00				
39.00	9.20	7.13	0.00	90.00	9.20	7.13	0.00				
40.00	9.20	7.13	0.00	91.00	9.20	7.13	0.00				
41.00	9.20	7.13	0.00	92.00	9.20	7.13	0.00				
42.00	9.20	7.13	0.00	93.00	9.20	7.13	0.00				
43.00	9.20	7.13	0.00	94.00	9.20	7.13	0.00				
44.00	9.20	7.13	0.00	95.00	9.20	7.13	0.00				
45.00	9.20	7.13	0.00	96.00	9.20	7.13	0.00				
46.00	9.20	7.13	0.00	97.00	9.20	7.13	0.00				
47.00	9.20	7.13	0.00	98.00	9.20	7.13	0.00				
48.00	9.20	7.13	0.00	99.00	9.20	7.13	0.00				
49.00	9.20	7.13	0.00	100.00	9.20	7.13	0.00				
50.00	9.20	7.13	0.00	101.00	9.20	7.13	0.00				
51.00	9.20	7.13	0.00	102.00	9.20	7.13	0.00				

Summary for Subcatchment 1a-2: PDA-1a-2

Runoff = 44.04 cfs @ 12.13 hrs, Volume= 3.815 af, Depth= 6.88"

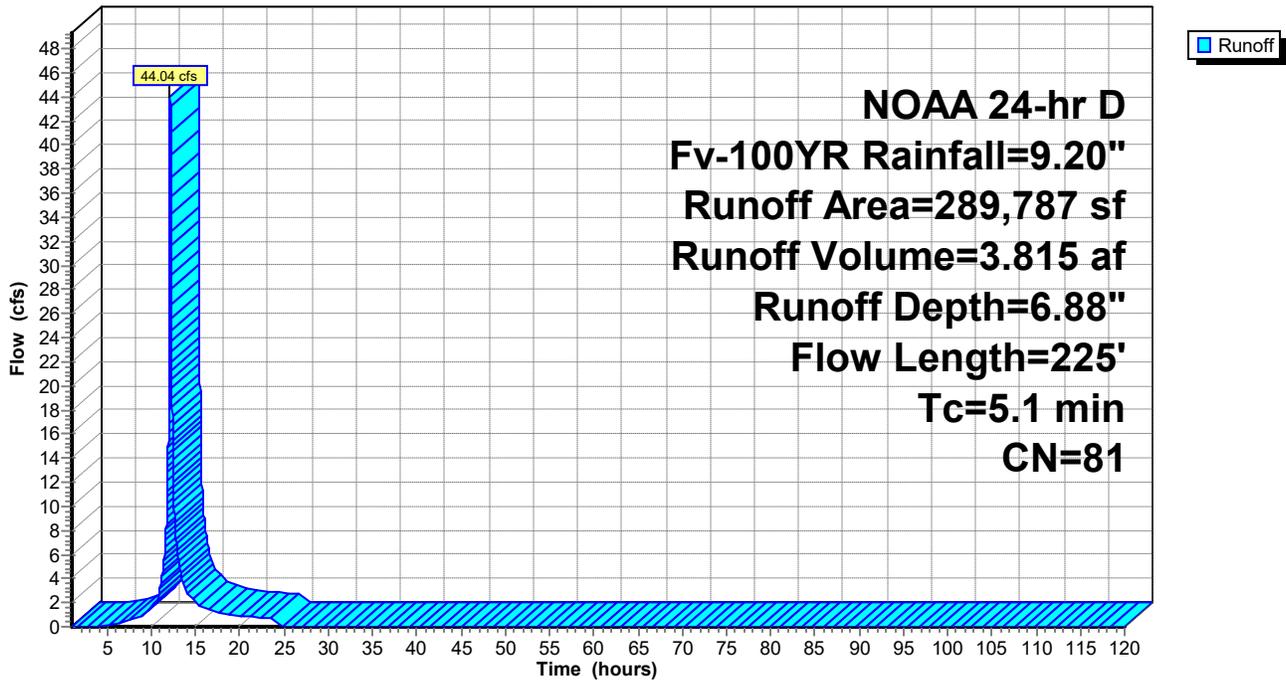
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
130,511	61	>75% Grass cover, Good, HSG B
* 159,276	98	combined impervious
289,787	81	Weighted Average
130,511		45.04% Pervious Area
159,276		54.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	25	0.0240	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
0.9	200	0.0050	3.66	212.41	Trap/Vee/Rect Channel Flow, OCF Bot.W=4.00' D=2.00' Z= 20.0 & 5.0 '/' Top.W=54.00' n= 0.030 Short grass
5.1	225	Total			

Subcatchment 1a-2: PDA-1a-2

Hydrograph



Blessing-Preliminary_H&H_Analysis-Safe_Con_Cv-Fv-N NOAA 24-hr D Fv-100YR Rainfall=9.20"

Prepared by Stephens Environmental Consulting, Inc.

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Hydrograph for Subcatchment 1a-2: PDA-1a-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	6.88	0.00	103.00	9.20	6.88	0.00
2.00	0.22	0.00	0.00	53.00	9.20	6.88	0.00	104.00	9.20	6.88	0.00
3.00	0.35	0.00	0.00	54.00	9.20	6.88	0.00	105.00	9.20	6.88	0.00
4.00	0.48	0.00	0.00	55.00	9.20	6.88	0.00	106.00	9.20	6.88	0.00
5.00	0.63	0.01	0.11	56.00	9.20	6.88	0.00	107.00	9.20	6.88	0.00
6.00	0.79	0.04	0.23	57.00	9.20	6.88	0.00	108.00	9.20	6.88	0.00
7.00	0.97	0.09	0.41	58.00	9.20	6.88	0.00	109.00	9.20	6.88	0.00
8.00	1.19	0.17	0.65	59.00	9.20	6.88	0.00	110.00	9.20	6.88	0.00
9.00	1.46	0.29	0.93	60.00	9.20	6.88	0.00	111.00	9.20	6.88	0.00
10.00	1.82	0.50	1.64	61.00	9.20	6.88	0.00	112.00	9.20	6.88	0.00
11.00	2.39	0.87	3.33	62.00	9.20	6.88	0.00	113.00	9.20	6.88	0.00
12.00	4.41	2.47	23.81	63.00	9.20	6.88	0.00	114.00	9.20	6.88	0.00
13.00	6.81	4.63	5.82	64.00	9.20	6.88	0.00	115.00	9.20	6.88	0.00
14.00	7.38	5.16	2.86	65.00	9.20	6.88	0.00	116.00	9.20	6.88	0.00
15.00	7.74	5.50	1.96	66.00	9.20	6.88	0.00	117.00	9.20	6.88	0.00
16.00	8.01	5.75	1.58	67.00	9.20	6.88	0.00	118.00	9.20	6.88	0.00
17.00	8.23	5.96	1.33	68.00	9.20	6.88	0.00	119.00	9.20	6.88	0.00
18.00	8.41	6.13	1.07	69.00	9.20	6.88	0.00	120.00	9.20	6.88	0.00
19.00	8.57	6.28	0.97	70.00	9.20	6.88	0.00				
20.00	8.72	6.42	0.91	71.00	9.20	6.88	0.00				
21.00	8.85	6.55	0.84	72.00	9.20	6.88	0.00				
22.00	8.98	6.67	0.78	73.00	9.20	6.88	0.00				
23.00	9.09	6.78	0.71	74.00	9.20	6.88	0.00				
24.00	9.20	6.88	0.65	75.00	9.20	6.88	0.00				
25.00	9.20	6.88	0.00	76.00	9.20	6.88	0.00				
26.00	9.20	6.88	0.00	77.00	9.20	6.88	0.00				
27.00	9.20	6.88	0.00	78.00	9.20	6.88	0.00				
28.00	9.20	6.88	0.00	79.00	9.20	6.88	0.00				
29.00	9.20	6.88	0.00	80.00	9.20	6.88	0.00				
30.00	9.20	6.88	0.00	81.00	9.20	6.88	0.00				
31.00	9.20	6.88	0.00	82.00	9.20	6.88	0.00				
32.00	9.20	6.88	0.00	83.00	9.20	6.88	0.00				
33.00	9.20	6.88	0.00	84.00	9.20	6.88	0.00				
34.00	9.20	6.88	0.00	85.00	9.20	6.88	0.00				
35.00	9.20	6.88	0.00	86.00	9.20	6.88	0.00				
36.00	9.20	6.88	0.00	87.00	9.20	6.88	0.00				
37.00	9.20	6.88	0.00	88.00	9.20	6.88	0.00				
38.00	9.20	6.88	0.00	89.00	9.20	6.88	0.00				
39.00	9.20	6.88	0.00	90.00	9.20	6.88	0.00				
40.00	9.20	6.88	0.00	91.00	9.20	6.88	0.00				
41.00	9.20	6.88	0.00	92.00	9.20	6.88	0.00				
42.00	9.20	6.88	0.00	93.00	9.20	6.88	0.00				
43.00	9.20	6.88	0.00	94.00	9.20	6.88	0.00				
44.00	9.20	6.88	0.00	95.00	9.20	6.88	0.00				
45.00	9.20	6.88	0.00	96.00	9.20	6.88	0.00				
46.00	9.20	6.88	0.00	97.00	9.20	6.88	0.00				
47.00	9.20	6.88	0.00	98.00	9.20	6.88	0.00				
48.00	9.20	6.88	0.00	99.00	9.20	6.88	0.00				
49.00	9.20	6.88	0.00	100.00	9.20	6.88	0.00				
50.00	9.20	6.88	0.00	101.00	9.20	6.88	0.00				
51.00	9.20	6.88	0.00	102.00	9.20	6.88	0.00				

Summary for Subcatchment 1a-3: PDA-1a-3

Runoff = 15.39 cfs @ 12.13 hrs, Volume= 1.317 af, Depth= 7.25"

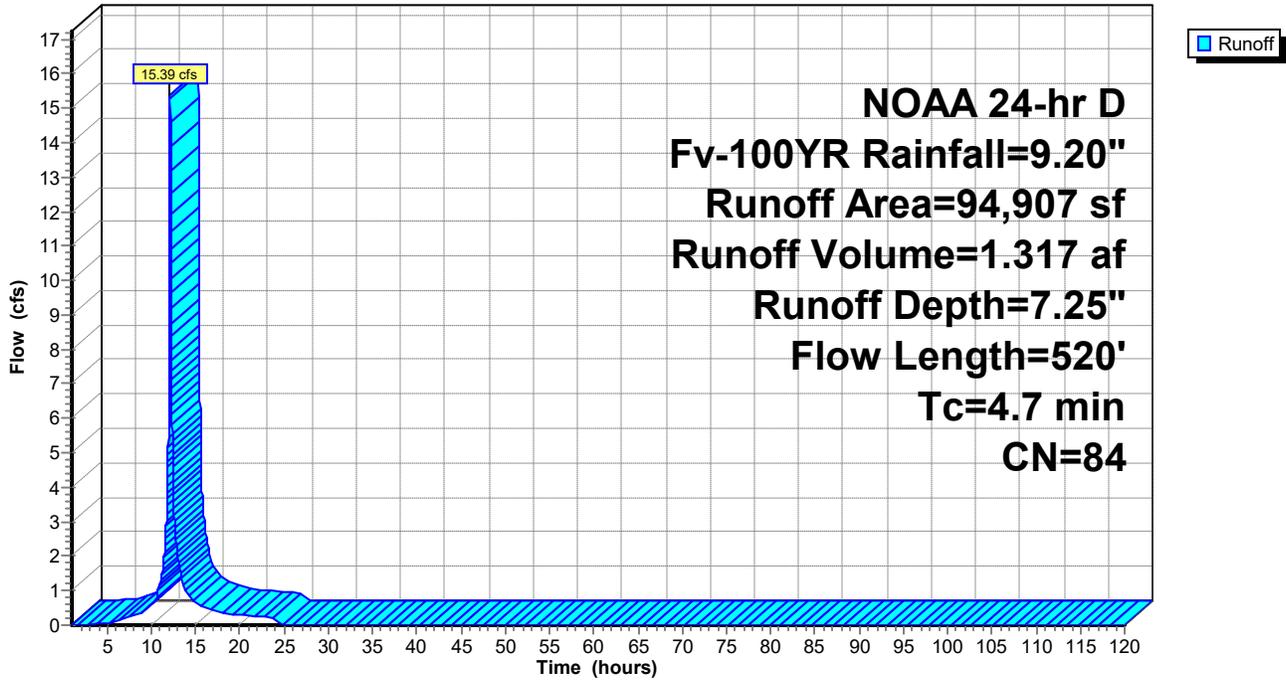
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
35,908	61	>75% Grass cover, Good, HSG B
* 58,999	98	Roofs, Paved parking, HSG B
94,907	84	Weighted Average
35,908		37.83% Pervious Area
58,999		62.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0020	0.49		Sheet Flow, SF Smooth surfaces n= 0.011 P2= 3.40"
0.4	20	0.0040	0.95		Shallow Concentrated Flow, SCF Grassed Waterway Kv= 15.0 fps
1.7	200	0.0050	2.00	6.01	Trap/Vee/Rect Channel Flow, Bot.W=1.00' D=0.50' Z= 10.0 '/' Top.W=11.00' n= 0.022 Earth, clean & straight
0.9	250	0.0060	4.64	371.02	Trap/Vee/Rect Channel Flow, across enclosed contour area Bot.W=20.00' D=2.00' Z= 10.0 '/' Top.W=60.00' n= 0.030 Short grass
4.7	520	Total			

Subcatchment 1a-3: PDA-1a-3

Hydrograph



Blessing-Preliminary_H&H_Analysis-Safe_Con_Cv-Fv-N NOAA 24-hr D Fv-100YR Rainfall=9.20"

Prepared by Stephens Environmental Consulting, Inc.

Printed 7/8/2021

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Hydrograph for Subcatchment 1a-3: PDA-1a-3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	7.25	0.00	103.00	9.20	7.25	0.00
2.00	0.22	0.00	0.00	53.00	9.20	7.25	0.00	104.00	9.20	7.25	0.00
3.00	0.35	0.00	0.00	54.00	9.20	7.25	0.00	105.00	9.20	7.25	0.00
4.00	0.48	0.01	0.03	55.00	9.20	7.25	0.00	106.00	9.20	7.25	0.00
5.00	0.63	0.03	0.07	56.00	9.20	7.25	0.00	107.00	9.20	7.25	0.00
6.00	0.79	0.07	0.11	57.00	9.20	7.25	0.00	108.00	9.20	7.25	0.00
7.00	0.97	0.14	0.18	58.00	9.20	7.25	0.00	109.00	9.20	7.25	0.00
8.00	1.19	0.24	0.26	59.00	9.20	7.25	0.00	110.00	9.20	7.25	0.00
9.00	1.46	0.39	0.36	60.00	9.20	7.25	0.00	111.00	9.20	7.25	0.00
10.00	1.82	0.62	0.61	61.00	9.20	7.25	0.00	112.00	9.20	7.25	0.00
11.00	2.39	1.03	1.21	62.00	9.20	7.25	0.00	113.00	9.20	7.25	0.00
12.00	4.41	2.73	8.49	63.00	9.20	7.25	0.00	114.00	9.20	7.25	0.00
13.00	6.81	4.96	1.93	64.00	9.20	7.25	0.00	115.00	9.20	7.25	0.00
14.00	7.38	5.50	0.95	65.00	9.20	7.25	0.00	116.00	9.20	7.25	0.00
15.00	7.74	5.85	0.65	66.00	9.20	7.25	0.00	117.00	9.20	7.25	0.00
16.00	8.01	6.10	0.53	67.00	9.20	7.25	0.00	118.00	9.20	7.25	0.00
17.00	8.23	6.32	0.44	68.00	9.20	7.25	0.00	119.00	9.20	7.25	0.00
18.00	8.41	6.49	0.36	69.00	9.20	7.25	0.00	120.00	9.20	7.25	0.00
19.00	8.57	6.64	0.32	70.00	9.20	7.25	0.00				
20.00	8.72	6.79	0.30	71.00	9.20	7.25	0.00				
21.00	8.85	6.92	0.28	72.00	9.20	7.25	0.00				
22.00	8.98	7.04	0.26	73.00	9.20	7.25	0.00				
23.00	9.09	7.15	0.24	74.00	9.20	7.25	0.00				
24.00	9.20	7.25	0.22	75.00	9.20	7.25	0.00				
25.00	9.20	7.25	0.00	76.00	9.20	7.25	0.00				
26.00	9.20	7.25	0.00	77.00	9.20	7.25	0.00				
27.00	9.20	7.25	0.00	78.00	9.20	7.25	0.00				
28.00	9.20	7.25	0.00	79.00	9.20	7.25	0.00				
29.00	9.20	7.25	0.00	80.00	9.20	7.25	0.00				
30.00	9.20	7.25	0.00	81.00	9.20	7.25	0.00				
31.00	9.20	7.25	0.00	82.00	9.20	7.25	0.00				
32.00	9.20	7.25	0.00	83.00	9.20	7.25	0.00				
33.00	9.20	7.25	0.00	84.00	9.20	7.25	0.00				
34.00	9.20	7.25	0.00	85.00	9.20	7.25	0.00				
35.00	9.20	7.25	0.00	86.00	9.20	7.25	0.00				
36.00	9.20	7.25	0.00	87.00	9.20	7.25	0.00				
37.00	9.20	7.25	0.00	88.00	9.20	7.25	0.00				
38.00	9.20	7.25	0.00	89.00	9.20	7.25	0.00				
39.00	9.20	7.25	0.00	90.00	9.20	7.25	0.00				
40.00	9.20	7.25	0.00	91.00	9.20	7.25	0.00				
41.00	9.20	7.25	0.00	92.00	9.20	7.25	0.00				
42.00	9.20	7.25	0.00	93.00	9.20	7.25	0.00				
43.00	9.20	7.25	0.00	94.00	9.20	7.25	0.00				
44.00	9.20	7.25	0.00	95.00	9.20	7.25	0.00				
45.00	9.20	7.25	0.00	96.00	9.20	7.25	0.00				
46.00	9.20	7.25	0.00	97.00	9.20	7.25	0.00				
47.00	9.20	7.25	0.00	98.00	9.20	7.25	0.00				
48.00	9.20	7.25	0.00	99.00	9.20	7.25	0.00				
49.00	9.20	7.25	0.00	100.00	9.20	7.25	0.00				
50.00	9.20	7.25	0.00	101.00	9.20	7.25	0.00				
51.00	9.20	7.25	0.00	102.00	9.20	7.25	0.00				

Summary for Subcatchment 1b: DA-1b

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

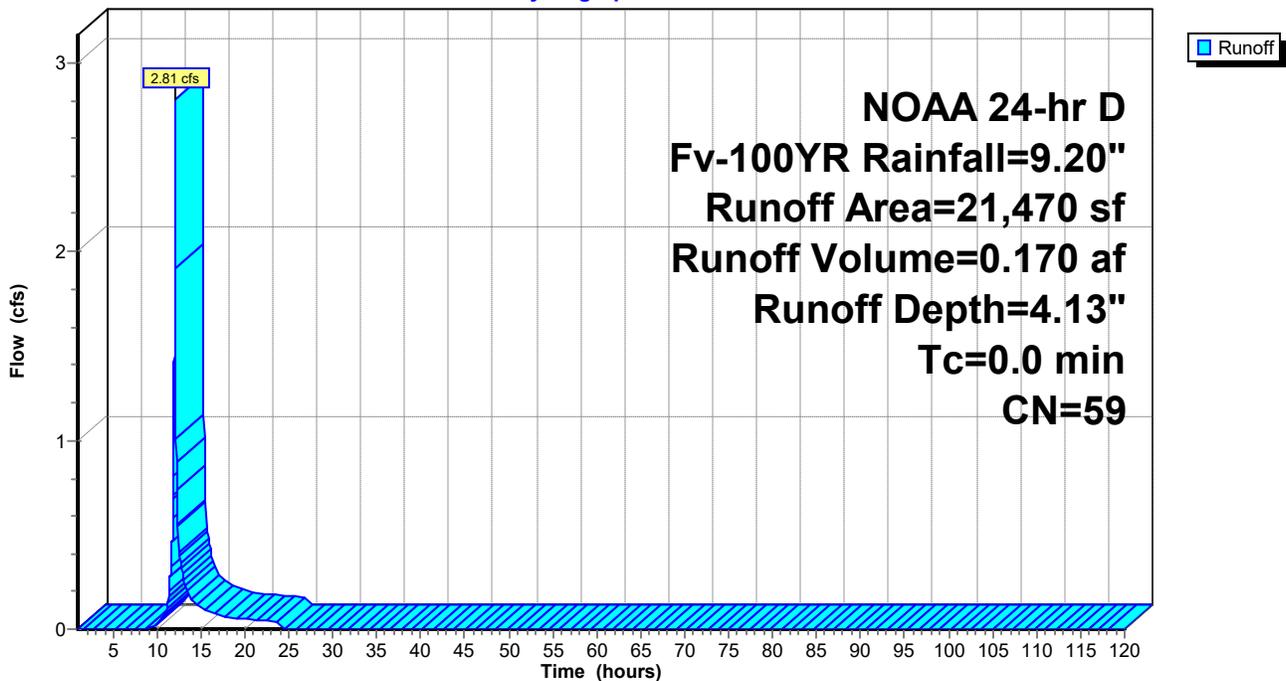
Runoff = 2.81 cfs @ 12.09 hrs, Volume= 0.170 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
20,717	58	Woods/grass comb., Good, HSG B
753	98	Roofs, HSG B
21,470	59	Weighted Average
20,717		96.49% Pervious Area
753		3.51% Impervious Area

Subcatchment 1b: DA-1b

Hydrograph



Blessing-Preliminary_H&H_Analysis-Safe_Con_Cv-Fv-N NOAA 24-hr D Fv-100YR Rainfall=9.20"

Prepared by Stephens Environmental Consulting, Inc.

Printed 7/8/2021

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Hydrograph for Subcatchment 1b: DA-1b

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	4.13	0.00	103.00	9.20	4.13	0.00
2.00	0.22	0.00	0.00	53.00	9.20	4.13	0.00	104.00	9.20	4.13	0.00
3.00	0.35	0.00	0.00	54.00	9.20	4.13	0.00	105.00	9.20	4.13	0.00
4.00	0.48	0.00	0.00	55.00	9.20	4.13	0.00	106.00	9.20	4.13	0.00
5.00	0.63	0.00	0.00	56.00	9.20	4.13	0.00	107.00	9.20	4.13	0.00
6.00	0.79	0.00	0.00	57.00	9.20	4.13	0.00	108.00	9.20	4.13	0.00
7.00	0.97	0.00	0.00	58.00	9.20	4.13	0.00	109.00	9.20	4.13	0.00
8.00	1.19	0.00	0.00	59.00	9.20	4.13	0.00	110.00	9.20	4.13	0.00
9.00	1.46	0.00	0.00	60.00	9.20	4.13	0.00	111.00	9.20	4.13	0.00
10.00	1.82	0.03	0.02	61.00	9.20	4.13	0.00	112.00	9.20	4.13	0.00
11.00	2.39	0.13	0.10	62.00	9.20	4.13	0.00	113.00	9.20	4.13	0.00
12.00	4.41	0.91	1.96	63.00	9.20	4.13	0.00	114.00	9.20	4.13	0.00
13.00	6.81	2.37	0.28	64.00	9.20	4.13	0.00	115.00	9.20	4.13	0.00
14.00	7.38	2.77	0.15	65.00	9.20	4.13	0.00	116.00	9.20	4.13	0.00
15.00	7.74	3.03	0.11	66.00	9.20	4.13	0.00	117.00	9.20	4.13	0.00
16.00	8.01	3.23	0.09	67.00	9.20	4.13	0.00	118.00	9.20	4.13	0.00
17.00	8.23	3.39	0.08	68.00	9.20	4.13	0.00	119.00	9.20	4.13	0.00
18.00	8.41	3.53	0.06	69.00	9.20	4.13	0.00	120.00	9.20	4.13	0.00
19.00	8.57	3.65	0.06	70.00	9.20	4.13	0.00				
20.00	8.72	3.76	0.05	71.00	9.20	4.13	0.00				
21.00	8.85	3.87	0.05	72.00	9.20	4.13	0.00				
22.00	8.98	3.96	0.05	73.00	9.20	4.13	0.00				
23.00	9.09	4.05	0.04	74.00	9.20	4.13	0.00				
24.00	9.20	4.13	0.02	75.00	9.20	4.13	0.00				
25.00	9.20	4.13	0.00	76.00	9.20	4.13	0.00				
26.00	9.20	4.13	0.00	77.00	9.20	4.13	0.00				
27.00	9.20	4.13	0.00	78.00	9.20	4.13	0.00				
28.00	9.20	4.13	0.00	79.00	9.20	4.13	0.00				
29.00	9.20	4.13	0.00	80.00	9.20	4.13	0.00				
30.00	9.20	4.13	0.00	81.00	9.20	4.13	0.00				
31.00	9.20	4.13	0.00	82.00	9.20	4.13	0.00				
32.00	9.20	4.13	0.00	83.00	9.20	4.13	0.00				
33.00	9.20	4.13	0.00	84.00	9.20	4.13	0.00				
34.00	9.20	4.13	0.00	85.00	9.20	4.13	0.00				
35.00	9.20	4.13	0.00	86.00	9.20	4.13	0.00				
36.00	9.20	4.13	0.00	87.00	9.20	4.13	0.00				
37.00	9.20	4.13	0.00	88.00	9.20	4.13	0.00				
38.00	9.20	4.13	0.00	89.00	9.20	4.13	0.00				
39.00	9.20	4.13	0.00	90.00	9.20	4.13	0.00				
40.00	9.20	4.13	0.00	91.00	9.20	4.13	0.00				
41.00	9.20	4.13	0.00	92.00	9.20	4.13	0.00				
42.00	9.20	4.13	0.00	93.00	9.20	4.13	0.00				
43.00	9.20	4.13	0.00	94.00	9.20	4.13	0.00				
44.00	9.20	4.13	0.00	95.00	9.20	4.13	0.00				
45.00	9.20	4.13	0.00	96.00	9.20	4.13	0.00				
46.00	9.20	4.13	0.00	97.00	9.20	4.13	0.00				
47.00	9.20	4.13	0.00	98.00	9.20	4.13	0.00				
48.00	9.20	4.13	0.00	99.00	9.20	4.13	0.00				
49.00	9.20	4.13	0.00	100.00	9.20	4.13	0.00				
50.00	9.20	4.13	0.00	101.00	9.20	4.13	0.00				
51.00	9.20	4.13	0.00	102.00	9.20	4.13	0.00				

Summary for Subcatchment 1c: PDA-1c

Runoff = 9.07 cfs @ 12.96 hrs, Volume= 2.917 af, Depth= 5.39"

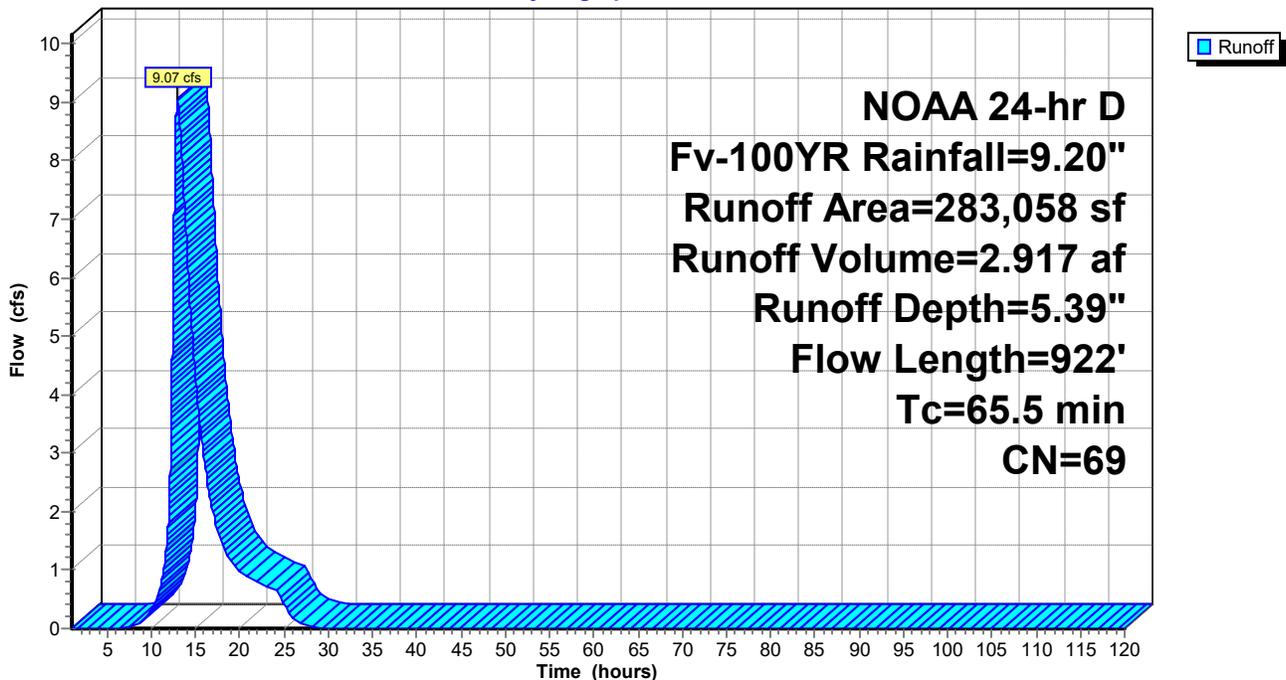
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
163,181	48	Brush, Good, HSG B
96,607	98	Roofs, HSG B
* 21,670	98	filtration Pad
* 1,600	98	leachate pad
283,058	69	Weighted Average
163,181		57.65% Pervious Area
119,877		42.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0100	0.09		Sheet Flow, SF from berm/Landscape buffer Grass: Dense n= 0.240 P2= 3.40"
1.6	125	0.0080	1.34		Shallow Concentrated Flow, SCF-through grass/Native Perennials Grassed Waterway Kv= 15.0 fps
45.6	697	0.0050	0.25	3.44	Channel Flow, OCF Trap Swale Area= 13.5 sf Perim= 40.0' r= 0.34' n= 0.200
65.5	922	Total			

Subcatchment 1c: PDA-1c

Hydrograph



Hydrograph for Subcatchment 1c: PDA-1c

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	5.39	0.00	103.00	9.20	5.39	0.00
2.00	0.22	0.00	0.00	53.00	9.20	5.39	0.00	104.00	9.20	5.39	0.00
3.00	0.35	0.00	0.00	54.00	9.20	5.39	0.00	105.00	9.20	5.39	0.00
4.00	0.48	0.00	0.00	55.00	9.20	5.39	0.00	106.00	9.20	5.39	0.00
5.00	0.63	0.00	0.00	56.00	9.20	5.39	0.00	107.00	9.20	5.39	0.00
6.00	0.79	0.00	0.00	57.00	9.20	5.39	0.00	108.00	9.20	5.39	0.00
7.00	0.97	0.00	0.00	58.00	9.20	5.39	0.00	109.00	9.20	5.39	0.00
8.00	1.19	0.02	0.03	59.00	9.20	5.39	0.00	110.00	9.20	5.39	0.00
9.00	1.46	0.06	0.13	60.00	9.20	5.39	0.00	111.00	9.20	5.39	0.00
10.00	1.82	0.16	0.31	61.00	9.20	5.39	0.00	112.00	9.20	5.39	0.00
11.00	2.39	0.37	0.69	62.00	9.20	5.39	0.00	113.00	9.20	5.39	0.00
12.00	4.41	1.54	2.05	63.00	9.20	5.39	0.00	114.00	9.20	5.39	0.00
13.00	6.81	3.36	9.03	64.00	9.20	5.39	0.00	115.00	9.20	5.39	0.00
14.00	7.38	3.82	6.53	65.00	9.20	5.39	0.00	116.00	9.20	5.39	0.00
15.00	7.74	4.13	4.29	66.00	9.20	5.39	0.00	117.00	9.20	5.39	0.00
16.00	8.01	4.35	2.85	67.00	9.20	5.39	0.00	118.00	9.20	5.39	0.00
17.00	8.23	4.55	1.95	68.00	9.20	5.39	0.00	119.00	9.20	5.39	0.00
18.00	8.41	4.70	1.46	69.00	9.20	5.39	0.00	120.00	9.20	5.39	0.00
19.00	8.57	4.84	1.15	70.00	9.20	5.39	0.00				
20.00	8.72	4.97	0.96	71.00	9.20	5.39	0.00				
21.00	8.85	5.08	0.86	72.00	9.20	5.39	0.00				
22.00	8.98	5.19	0.79	73.00	9.20	5.39	0.00				
23.00	9.09	5.29	0.73	74.00	9.20	5.39	0.00				
24.00	9.20	5.39	0.67	75.00	9.20	5.39	0.00				
25.00	9.20	5.39	0.43	76.00	9.20	5.39	0.00				
26.00	9.20	5.39	0.19	77.00	9.20	5.39	0.00				
27.00	9.20	5.39	0.08	78.00	9.20	5.39	0.00				
28.00	9.20	5.39	0.03	79.00	9.20	5.39	0.00				
29.00	9.20	5.39	0.01	80.00	9.20	5.39	0.00				
30.00	9.20	5.39	0.00	81.00	9.20	5.39	0.00				
31.00	9.20	5.39	0.00	82.00	9.20	5.39	0.00				
32.00	9.20	5.39	0.00	83.00	9.20	5.39	0.00				
33.00	9.20	5.39	0.00	84.00	9.20	5.39	0.00				
34.00	9.20	5.39	0.00	85.00	9.20	5.39	0.00				
35.00	9.20	5.39	0.00	86.00	9.20	5.39	0.00				
36.00	9.20	5.39	0.00	87.00	9.20	5.39	0.00				
37.00	9.20	5.39	0.00	88.00	9.20	5.39	0.00				
38.00	9.20	5.39	0.00	89.00	9.20	5.39	0.00				
39.00	9.20	5.39	0.00	90.00	9.20	5.39	0.00				
40.00	9.20	5.39	0.00	91.00	9.20	5.39	0.00				
41.00	9.20	5.39	0.00	92.00	9.20	5.39	0.00				
42.00	9.20	5.39	0.00	93.00	9.20	5.39	0.00				
43.00	9.20	5.39	0.00	94.00	9.20	5.39	0.00				
44.00	9.20	5.39	0.00	95.00	9.20	5.39	0.00				
45.00	9.20	5.39	0.00	96.00	9.20	5.39	0.00				
46.00	9.20	5.39	0.00	97.00	9.20	5.39	0.00				
47.00	9.20	5.39	0.00	98.00	9.20	5.39	0.00				
48.00	9.20	5.39	0.00	99.00	9.20	5.39	0.00				
49.00	9.20	5.39	0.00	100.00	9.20	5.39	0.00				
50.00	9.20	5.39	0.00	101.00	9.20	5.39	0.00				
51.00	9.20	5.39	0.00	102.00	9.20	5.39	0.00				

Summary for Subcatchment DA-2: DA-2 Pre-Dev

Initial Mannings on trap swale set at 0.15 pending depth assessment

Runoff = 9.02 cfs @ 12.48 hrs, Volume= 1.922 af, Depth= 4.88"

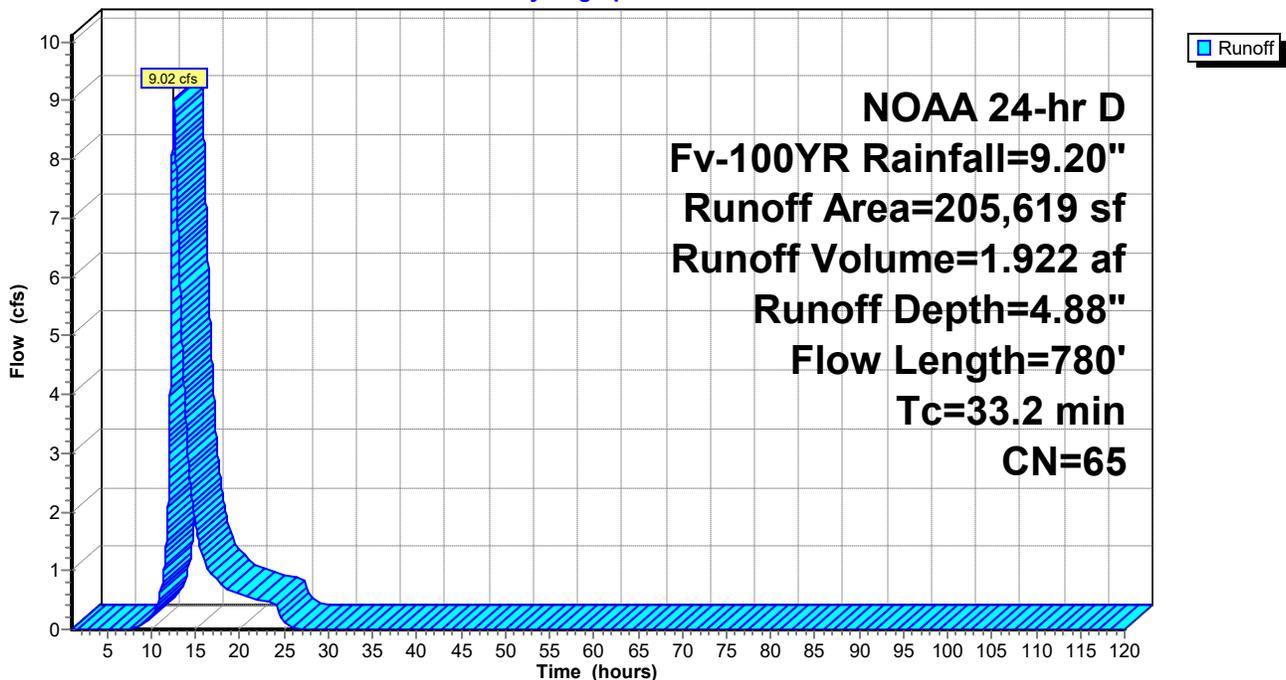
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
181,287	61	>75% Grass cover, Good, HSG B
6,845	98	Paved parking, HSG B
17,487	96	Gravel surface, HSG B
205,619	65	Weighted Average
198,774		96.67% Pervious Area
6,845		3.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	100	0.0025	0.08		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.40"
11.4	680	0.0200	0.99		Shallow Concentrated Flow, SCF-pad shoulder Short Grass Pasture Kv= 7.0 fps
33.2	780	Total			

Subcatchment DA-2: DA-2 Pre-Dev

Hydrograph



Hydrograph for Subcatchment DA-2: DA-2 Pre-Dev

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	4.88	0.00	103.00	9.20	4.88	0.00
2.00	0.22	0.00	0.00	53.00	9.20	4.88	0.00	104.00	9.20	4.88	0.00
3.00	0.35	0.00	0.00	54.00	9.20	4.88	0.00	105.00	9.20	4.88	0.00
4.00	0.48	0.00	0.00	55.00	9.20	4.88	0.00	106.00	9.20	4.88	0.00
5.00	0.63	0.00	0.00	56.00	9.20	4.88	0.00	107.00	9.20	4.88	0.00
6.00	0.79	0.00	0.00	57.00	9.20	4.88	0.00	108.00	9.20	4.88	0.00
7.00	0.97	0.00	0.00	58.00	9.20	4.88	0.00	109.00	9.20	4.88	0.00
8.00	1.19	0.00	0.00	59.00	9.20	4.88	0.00	110.00	9.20	4.88	0.00
9.00	1.46	0.03	0.08	60.00	9.20	4.88	0.00	111.00	9.20	4.88	0.00
10.00	1.82	0.09	0.24	61.00	9.20	4.88	0.00	112.00	9.20	4.88	0.00
11.00	2.39	0.26	0.61	62.00	9.20	4.88	0.00	113.00	9.20	4.88	0.00
12.00	4.41	1.27	2.60	63.00	9.20	4.88	0.00	114.00	9.20	4.88	0.00
13.00	6.81	2.96	6.96	64.00	9.20	4.88	0.00	115.00	9.20	4.88	0.00
14.00	7.38	3.40	3.30	65.00	9.20	4.88	0.00	116.00	9.20	4.88	0.00
15.00	7.74	3.69	1.75	66.00	9.20	4.88	0.00	117.00	9.20	4.88	0.00
16.00	8.01	3.90	1.15	67.00	9.20	4.88	0.00	118.00	9.20	4.88	0.00
17.00	8.23	4.08	0.93	68.00	9.20	4.88	0.00	119.00	9.20	4.88	0.00
18.00	8.41	4.23	0.77	69.00	9.20	4.88	0.00	120.00	9.20	4.88	0.00
19.00	8.57	4.36	0.65	70.00	9.20	4.88	0.00				
20.00	8.72	4.48	0.59	71.00	9.20	4.88	0.00				
21.00	8.85	4.59	0.55	72.00	9.20	4.88	0.00				
22.00	8.98	4.70	0.51	73.00	9.20	4.88	0.00				
23.00	9.09	4.80	0.47	74.00	9.20	4.88	0.00				
24.00	9.20	4.88	0.43	75.00	9.20	4.88	0.00				
25.00	9.20	4.88	0.13	76.00	9.20	4.88	0.00				
26.00	9.20	4.88	0.02	77.00	9.20	4.88	0.00				
27.00	9.20	4.88	0.00	78.00	9.20	4.88	0.00				
28.00	9.20	4.88	0.00	79.00	9.20	4.88	0.00				
29.00	9.20	4.88	0.00	80.00	9.20	4.88	0.00				
30.00	9.20	4.88	0.00	81.00	9.20	4.88	0.00				
31.00	9.20	4.88	0.00	82.00	9.20	4.88	0.00				
32.00	9.20	4.88	0.00	83.00	9.20	4.88	0.00				
33.00	9.20	4.88	0.00	84.00	9.20	4.88	0.00				
34.00	9.20	4.88	0.00	85.00	9.20	4.88	0.00				
35.00	9.20	4.88	0.00	86.00	9.20	4.88	0.00				
36.00	9.20	4.88	0.00	87.00	9.20	4.88	0.00				
37.00	9.20	4.88	0.00	88.00	9.20	4.88	0.00				
38.00	9.20	4.88	0.00	89.00	9.20	4.88	0.00				
39.00	9.20	4.88	0.00	90.00	9.20	4.88	0.00				
40.00	9.20	4.88	0.00	91.00	9.20	4.88	0.00				
41.00	9.20	4.88	0.00	92.00	9.20	4.88	0.00				
42.00	9.20	4.88	0.00	93.00	9.20	4.88	0.00				
43.00	9.20	4.88	0.00	94.00	9.20	4.88	0.00				
44.00	9.20	4.88	0.00	95.00	9.20	4.88	0.00				
45.00	9.20	4.88	0.00	96.00	9.20	4.88	0.00				
46.00	9.20	4.88	0.00	97.00	9.20	4.88	0.00				
47.00	9.20	4.88	0.00	98.00	9.20	4.88	0.00				
48.00	9.20	4.88	0.00	99.00	9.20	4.88	0.00				
49.00	9.20	4.88	0.00	100.00	9.20	4.88	0.00				
50.00	9.20	4.88	0.00	101.00	9.20	4.88	0.00				
51.00	9.20	4.88	0.00	102.00	9.20	4.88	0.00				

Summary for Subcatchment PDA-1b: PDA-1b

Runoff = 0.84 cfs @ 12.51 hrs, Volume= 0.181 af, Depth= 4.13"

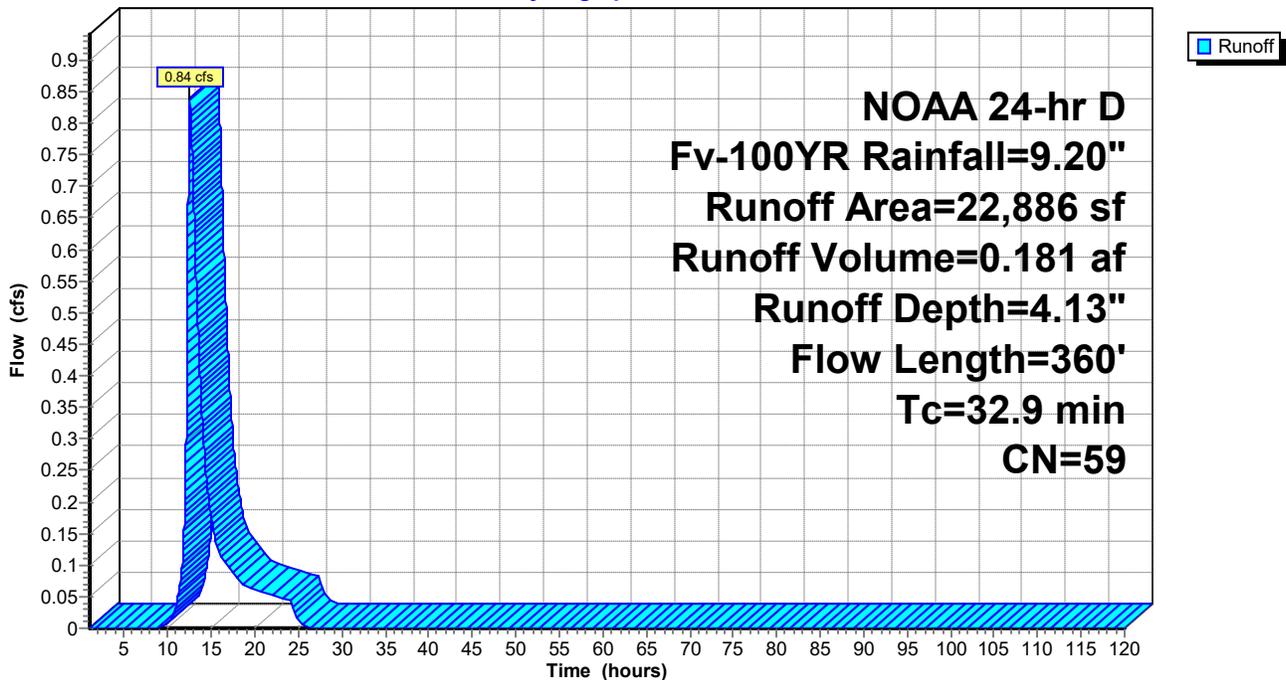
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
22,133	58	Woods/grass comb., Good, HSG B
753	98	Roofs, HSG B
22,886	59	Weighted Average
22,133		96.71% Pervious Area
753		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.6	100	0.0030	0.06		Sheet Flow, newly graded grass SF Grass: Dense n= 0.240 P2= 3.40"
0.2	15	0.0470	1.52		Shallow Concentrated Flow, SCF- pass MW Short Grass Pasture Kv= 7.0 fps
3.1	245	0.0050	1.32	9.24	Channel Flow, OCF-Regraded Trap Swale Area= 7.0 sf Perim= 24.0' r= 0.29' n= 0.035 Earth, dense weeds
32.9	360	Total			

Subcatchment PDA-1b: PDA-1b

Hydrograph



Hydrograph for Subcatchment PDA-1b: PDA-1b

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	4.13	0.00	103.00	9.20	4.13	0.00
2.00	0.22	0.00	0.00	53.00	9.20	4.13	0.00	104.00	9.20	4.13	0.00
3.00	0.35	0.00	0.00	54.00	9.20	4.13	0.00	105.00	9.20	4.13	0.00
4.00	0.48	0.00	0.00	55.00	9.20	4.13	0.00	106.00	9.20	4.13	0.00
5.00	0.63	0.00	0.00	56.00	9.20	4.13	0.00	107.00	9.20	4.13	0.00
6.00	0.79	0.00	0.00	57.00	9.20	4.13	0.00	108.00	9.20	4.13	0.00
7.00	0.97	0.00	0.00	58.00	9.20	4.13	0.00	109.00	9.20	4.13	0.00
8.00	1.19	0.00	0.00	59.00	9.20	4.13	0.00	110.00	9.20	4.13	0.00
9.00	1.46	0.00	0.00	60.00	9.20	4.13	0.00	111.00	9.20	4.13	0.00
10.00	1.82	0.03	0.01	61.00	9.20	4.13	0.00	112.00	9.20	4.13	0.00
11.00	2.39	0.13	0.04	62.00	9.20	4.13	0.00	113.00	9.20	4.13	0.00
12.00	4.41	0.91	0.21	63.00	9.20	4.13	0.00	114.00	9.20	4.13	0.00
13.00	6.81	2.37	0.66	64.00	9.20	4.13	0.00	115.00	9.20	4.13	0.00
14.00	7.38	2.77	0.32	65.00	9.20	4.13	0.00	116.00	9.20	4.13	0.00
15.00	7.74	3.03	0.17	66.00	9.20	4.13	0.00	117.00	9.20	4.13	0.00
16.00	8.01	3.23	0.12	67.00	9.20	4.13	0.00	118.00	9.20	4.13	0.00
17.00	8.23	3.39	0.09	68.00	9.20	4.13	0.00	119.00	9.20	4.13	0.00
18.00	8.41	3.53	0.08	69.00	9.20	4.13	0.00	120.00	9.20	4.13	0.00
19.00	8.57	3.65	0.07	70.00	9.20	4.13	0.00				
20.00	8.72	3.76	0.06	71.00	9.20	4.13	0.00				
21.00	8.85	3.87	0.06	72.00	9.20	4.13	0.00				
22.00	8.98	3.96	0.05	73.00	9.20	4.13	0.00				
23.00	9.09	4.05	0.05	74.00	9.20	4.13	0.00				
24.00	9.20	4.13	0.04	75.00	9.20	4.13	0.00				
25.00	9.20	4.13	0.01	76.00	9.20	4.13	0.00				
26.00	9.20	4.13	0.00	77.00	9.20	4.13	0.00				
27.00	9.20	4.13	0.00	78.00	9.20	4.13	0.00				
28.00	9.20	4.13	0.00	79.00	9.20	4.13	0.00				
29.00	9.20	4.13	0.00	80.00	9.20	4.13	0.00				
30.00	9.20	4.13	0.00	81.00	9.20	4.13	0.00				
31.00	9.20	4.13	0.00	82.00	9.20	4.13	0.00				
32.00	9.20	4.13	0.00	83.00	9.20	4.13	0.00				
33.00	9.20	4.13	0.00	84.00	9.20	4.13	0.00				
34.00	9.20	4.13	0.00	85.00	9.20	4.13	0.00				
35.00	9.20	4.13	0.00	86.00	9.20	4.13	0.00				
36.00	9.20	4.13	0.00	87.00	9.20	4.13	0.00				
37.00	9.20	4.13	0.00	88.00	9.20	4.13	0.00				
38.00	9.20	4.13	0.00	89.00	9.20	4.13	0.00				
39.00	9.20	4.13	0.00	90.00	9.20	4.13	0.00				
40.00	9.20	4.13	0.00	91.00	9.20	4.13	0.00				
41.00	9.20	4.13	0.00	92.00	9.20	4.13	0.00				
42.00	9.20	4.13	0.00	93.00	9.20	4.13	0.00				
43.00	9.20	4.13	0.00	94.00	9.20	4.13	0.00				
44.00	9.20	4.13	0.00	95.00	9.20	4.13	0.00				
45.00	9.20	4.13	0.00	96.00	9.20	4.13	0.00				
46.00	9.20	4.13	0.00	97.00	9.20	4.13	0.00				
47.00	9.20	4.13	0.00	98.00	9.20	4.13	0.00				
48.00	9.20	4.13	0.00	99.00	9.20	4.13	0.00				
49.00	9.20	4.13	0.00	100.00	9.20	4.13	0.00				
50.00	9.20	4.13	0.00	101.00	9.20	4.13	0.00				
51.00	9.20	4.13	0.00	102.00	9.20	4.13	0.00				

Summary for Subcatchment PDA-1c: PDA-1c

Runoff = 7.55 cfs @ 13.08 hrs, Volume= 2.568 af, Depth= 5.14"

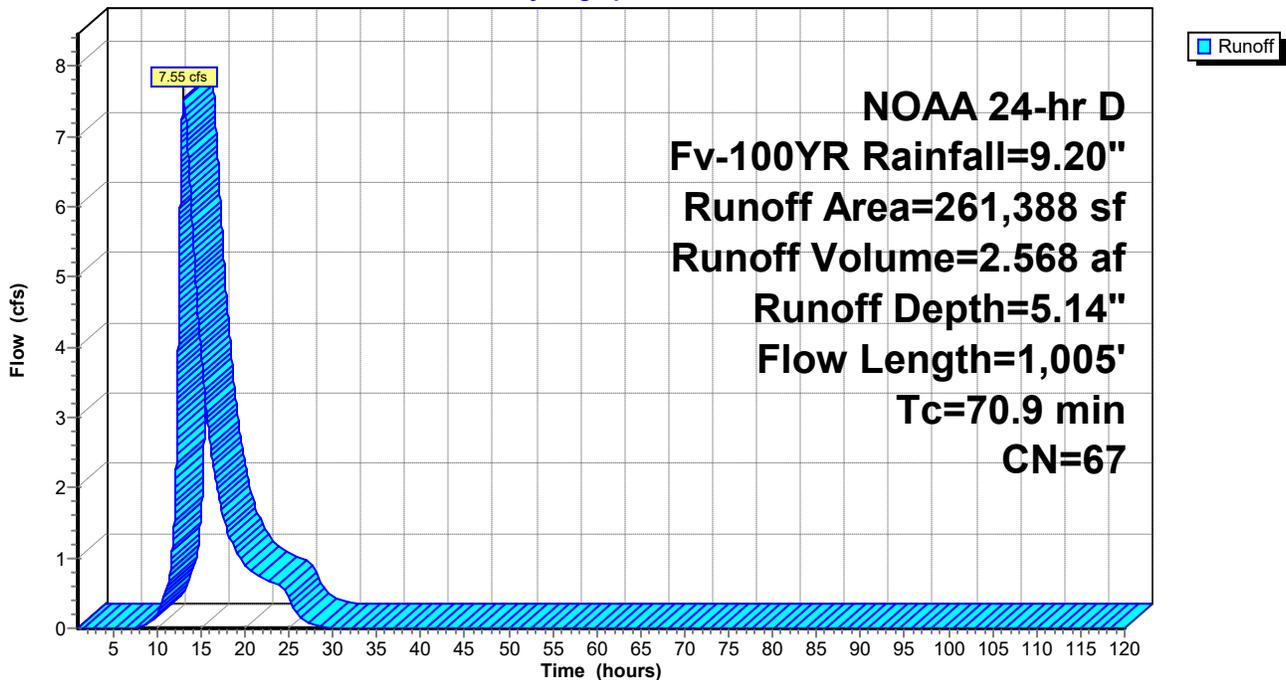
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
163,181	48	Brush, Good, HSG B
96,607	98	Roofs, HSG B
* 1,600	98	leachate tank pad
261,388	67	Weighted Average
163,181		62.43% Pervious Area
98,207		37.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0100	0.09		Sheet Flow, SF from berm/Landscape buffer Grass: Dense n= 0.240 P2= 3.40"
1.6	125	0.0080	1.34		Shallow Concentrated Flow, SCF-through grass/Native Perennials Grassed Waterway Kv= 15.0 fps
51.0	780	0.0050	0.25	3.44	Channel Flow, OCF Trap Swale Area= 13.5 sf Perim= 40.0' r= 0.34' n= 0.200
70.9	1,005	Total			

Subcatchment PDA-1c: PDA-1c

Hydrograph



Blessing-Preliminary_H&H_Analysis-Safe_Con_Cv-Fv-N NOAA 24-hr D Fv-100YR Rainfall=9.20"

Prepared by Stephens Environmental Consulting, Inc.

Printed 7/8/2021

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Hydrograph for Subcatchment PDA-1c: PDA-1c

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	5.14	0.00	103.00	9.20	5.14	0.00
2.00	0.22	0.00	0.00	53.00	9.20	5.14	0.00	104.00	9.20	5.14	0.00
3.00	0.35	0.00	0.00	54.00	9.20	5.14	0.00	105.00	9.20	5.14	0.00
4.00	0.48	0.00	0.00	55.00	9.20	5.14	0.00	106.00	9.20	5.14	0.00
5.00	0.63	0.00	0.00	56.00	9.20	5.14	0.00	107.00	9.20	5.14	0.00
6.00	0.79	0.00	0.00	57.00	9.20	5.14	0.00	108.00	9.20	5.14	0.00
7.00	0.97	0.00	0.00	58.00	9.20	5.14	0.00	109.00	9.20	5.14	0.00
8.00	1.19	0.01	0.01	59.00	9.20	5.14	0.00	110.00	9.20	5.14	0.00
9.00	1.46	0.04	0.07	60.00	9.20	5.14	0.00	111.00	9.20	5.14	0.00
10.00	1.82	0.12	0.21	61.00	9.20	5.14	0.00	112.00	9.20	5.14	0.00
11.00	2.39	0.31	0.50	62.00	9.20	5.14	0.00	113.00	9.20	5.14	0.00
12.00	4.41	1.40	1.54	63.00	9.20	5.14	0.00	114.00	9.20	5.14	0.00
13.00	6.81	3.15	7.51	64.00	9.20	5.14	0.00	115.00	9.20	5.14	0.00
14.00	7.38	3.61	5.81	65.00	9.20	5.14	0.00	116.00	9.20	5.14	0.00
15.00	7.74	3.91	3.95	66.00	9.20	5.14	0.00	117.00	9.20	5.14	0.00
16.00	8.01	4.13	2.71	67.00	9.20	5.14	0.00	118.00	9.20	5.14	0.00
17.00	8.23	4.31	1.90	68.00	9.20	5.14	0.00	119.00	9.20	5.14	0.00
18.00	8.41	4.47	1.39	69.00	9.20	5.14	0.00	120.00	9.20	5.14	0.00
19.00	8.57	4.60	1.09	70.00	9.20	5.14	0.00				
20.00	8.72	4.72	0.90	71.00	9.20	5.14	0.00				
21.00	8.85	4.84	0.80	72.00	9.20	5.14	0.00				
22.00	8.98	4.95	0.73	73.00	9.20	5.14	0.00				
23.00	9.09	5.05	0.67	74.00	9.20	5.14	0.00				
24.00	9.20	5.14	0.61	75.00	9.20	5.14	0.00				
25.00	9.20	5.14	0.42	76.00	9.20	5.14	0.00				
26.00	9.20	5.14	0.20	77.00	9.20	5.14	0.00				
27.00	9.20	5.14	0.09	78.00	9.20	5.14	0.00				
28.00	9.20	5.14	0.04	79.00	9.20	5.14	0.00				
29.00	9.20	5.14	0.01	80.00	9.20	5.14	0.00				
30.00	9.20	5.14	0.00	81.00	9.20	5.14	0.00				
31.00	9.20	5.14	0.00	82.00	9.20	5.14	0.00				
32.00	9.20	5.14	0.00	83.00	9.20	5.14	0.00				
33.00	9.20	5.14	0.00	84.00	9.20	5.14	0.00				
34.00	9.20	5.14	0.00	85.00	9.20	5.14	0.00				
35.00	9.20	5.14	0.00	86.00	9.20	5.14	0.00				
36.00	9.20	5.14	0.00	87.00	9.20	5.14	0.00				
37.00	9.20	5.14	0.00	88.00	9.20	5.14	0.00				
38.00	9.20	5.14	0.00	89.00	9.20	5.14	0.00				
39.00	9.20	5.14	0.00	90.00	9.20	5.14	0.00				
40.00	9.20	5.14	0.00	91.00	9.20	5.14	0.00				
41.00	9.20	5.14	0.00	92.00	9.20	5.14	0.00				
42.00	9.20	5.14	0.00	93.00	9.20	5.14	0.00				
43.00	9.20	5.14	0.00	94.00	9.20	5.14	0.00				
44.00	9.20	5.14	0.00	95.00	9.20	5.14	0.00				
45.00	9.20	5.14	0.00	96.00	9.20	5.14	0.00				
46.00	9.20	5.14	0.00	97.00	9.20	5.14	0.00				
47.00	9.20	5.14	0.00	98.00	9.20	5.14	0.00				
48.00	9.20	5.14	0.00	99.00	9.20	5.14	0.00				
49.00	9.20	5.14	0.00	100.00	9.20	5.14	0.00				
50.00	9.20	5.14	0.00	101.00	9.20	5.14	0.00				
51.00	9.20	5.14	0.00	102.00	9.20	5.14	0.00				

Summary for Subcatchment PDA-2: PDA-2

Initial Mannings on trap swale set at 0.15 pending depth assessment

Runoff = 7.62 cfs @ 12.92 hrs, Volume= 2.425 af, Depth= 6.14"

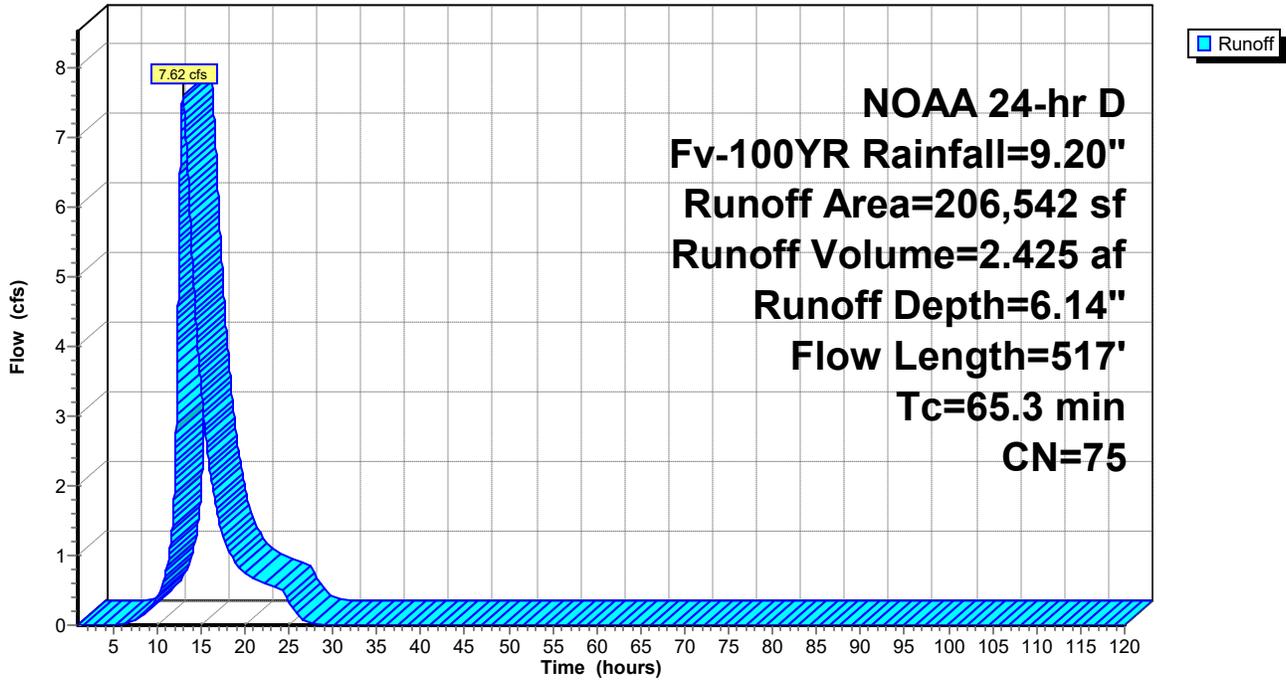
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Fv-100YR Rainfall=9.20"

Area (sf)	CN	Description
126,842	61	>75% Grass cover, Good, HSG B
52,641	98	Paved parking, HSG B
27,059	98	Roofs, HSG B
206,542	75	Weighted Average
126,842		61.41% Pervious Area
79,700		38.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.1	100	0.0050	0.07		Sheet Flow, sheet flow Grass: Dense n= 0.240 P2= 3.40"
0.2	22	0.0450	1.48		Shallow Concentrated Flow, SCF-pad shoulder Short Grass Pasture Kv= 7.0 fps
41.0	395	0.0040	0.16	1.61	Channel Flow, OCF-Trap Channel Area= 10.0 sf Perim= 50.0' r= 0.20' n= 0.200
65.3	517	Total			

Subcatchment PDA-2: PDA-2

Hydrograph



Hydrograph for Subcatchment PDA-2: PDA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.11	0.00	0.00	52.00	9.20	6.14	0.00	103.00	9.20	6.14	0.00
2.00	0.22	0.00	0.00	53.00	9.20	6.14	0.00	104.00	9.20	6.14	0.00
3.00	0.35	0.00	0.00	54.00	9.20	6.14	0.00	105.00	9.20	6.14	0.00
4.00	0.48	0.00	0.00	55.00	9.20	6.14	0.00	106.00	9.20	6.14	0.00
5.00	0.63	0.00	0.00	56.00	9.20	6.14	0.00	107.00	9.20	6.14	0.00
6.00	0.79	0.00	0.00	57.00	9.20	6.14	0.00	108.00	9.20	6.14	0.00
7.00	0.97	0.03	0.04	58.00	9.20	6.14	0.00	109.00	9.20	6.14	0.00
8.00	1.19	0.07	0.11	59.00	9.20	6.14	0.00	110.00	9.20	6.14	0.00
9.00	1.46	0.15	0.22	60.00	9.20	6.14	0.00	111.00	9.20	6.14	0.00
10.00	1.82	0.30	0.40	61.00	9.20	6.14	0.00	112.00	9.20	6.14	0.00
11.00	2.39	0.59	0.74	62.00	9.20	6.14	0.00	113.00	9.20	6.14	0.00
12.00	4.41	1.98	1.93	63.00	9.20	6.14	0.00	114.00	9.20	6.14	0.00
13.00	6.81	3.98	7.56	64.00	9.20	6.14	0.00	115.00	9.20	6.14	0.00
14.00	7.38	4.48	5.34	65.00	9.20	6.14	0.00	116.00	9.20	6.14	0.00
15.00	7.74	4.81	3.45	66.00	9.20	6.14	0.00	117.00	9.20	6.14	0.00
16.00	8.01	5.05	2.27	67.00	9.20	6.14	0.00	118.00	9.20	6.14	0.00
17.00	8.23	5.25	1.53	68.00	9.20	6.14	0.00	119.00	9.20	6.14	0.00
18.00	8.41	5.42	1.14	69.00	9.20	6.14	0.00	120.00	9.20	6.14	0.00
19.00	8.57	5.56	0.89	70.00	9.20	6.14	0.00				
20.00	8.72	5.69	0.74	71.00	9.20	6.14	0.00				
21.00	8.85	5.82	0.66	72.00	9.20	6.14	0.00				
22.00	8.98	5.93	0.61	73.00	9.20	6.14	0.00				
23.00	9.09	6.04	0.56	74.00	9.20	6.14	0.00				
24.00	9.20	6.14	0.52	75.00	9.20	6.14	0.00				
25.00	9.20	6.14	0.33	76.00	9.20	6.14	0.00				
26.00	9.20	6.14	0.14	77.00	9.20	6.14	0.00				
27.00	9.20	6.14	0.06	78.00	9.20	6.14	0.00				
28.00	9.20	6.14	0.02	79.00	9.20	6.14	0.00				
29.00	9.20	6.14	0.01	80.00	9.20	6.14	0.00				
30.00	9.20	6.14	0.00	81.00	9.20	6.14	0.00				
31.00	9.20	6.14	0.00	82.00	9.20	6.14	0.00				
32.00	9.20	6.14	0.00	83.00	9.20	6.14	0.00				
33.00	9.20	6.14	0.00	84.00	9.20	6.14	0.00				
34.00	9.20	6.14	0.00	85.00	9.20	6.14	0.00				
35.00	9.20	6.14	0.00	86.00	9.20	6.14	0.00				
36.00	9.20	6.14	0.00	87.00	9.20	6.14	0.00				
37.00	9.20	6.14	0.00	88.00	9.20	6.14	0.00				
38.00	9.20	6.14	0.00	89.00	9.20	6.14	0.00				
39.00	9.20	6.14	0.00	90.00	9.20	6.14	0.00				
40.00	9.20	6.14	0.00	91.00	9.20	6.14	0.00				
41.00	9.20	6.14	0.00	92.00	9.20	6.14	0.00				
42.00	9.20	6.14	0.00	93.00	9.20	6.14	0.00				
43.00	9.20	6.14	0.00	94.00	9.20	6.14	0.00				
44.00	9.20	6.14	0.00	95.00	9.20	6.14	0.00				
45.00	9.20	6.14	0.00	96.00	9.20	6.14	0.00				
46.00	9.20	6.14	0.00	97.00	9.20	6.14	0.00				
47.00	9.20	6.14	0.00	98.00	9.20	6.14	0.00				
48.00	9.20	6.14	0.00	99.00	9.20	6.14	0.00				
49.00	9.20	6.14	0.00	100.00	9.20	6.14	0.00				
50.00	9.20	6.14	0.00	101.00	9.20	6.14	0.00				
51.00	9.20	6.14	0.00	102.00	9.20	6.14	0.00				

Summary for Pond EDB-1: PDA-2 Extended Detention Basin

Inflow Area = 4.742 ac, 38.59% Impervious, Inflow Depth = 6.14" for Fv-100YR event
 Inflow = 7.62 cfs @ 12.92 hrs, Volume= 2.425 af
 Outflow = 5.23 cfs @ 14.05 hrs, Volume= 2.425 af, Atten= 31%, Lag= 67.7 min
 Primary = 5.23 cfs @ 14.05 hrs, Volume= 2.425 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 9.23' @ 14.05 hrs Surf.Area= 27,690 sf Storage= 34,657 cf

Plug-Flow detention time= 278.8 min calculated for 2.424 af (100% of inflow)
 Center-of-Mass det. time= 278.9 min (1,189.9 - 911.0)

Volume	Invert	Avail.Storage	Storage Description
#1	7.20'	42,556 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
7.20	10,724	0	0
8.00	12,674	9,359	9,359
9.00	25,832	19,253	28,612
9.50	29,944	13,944	42,556

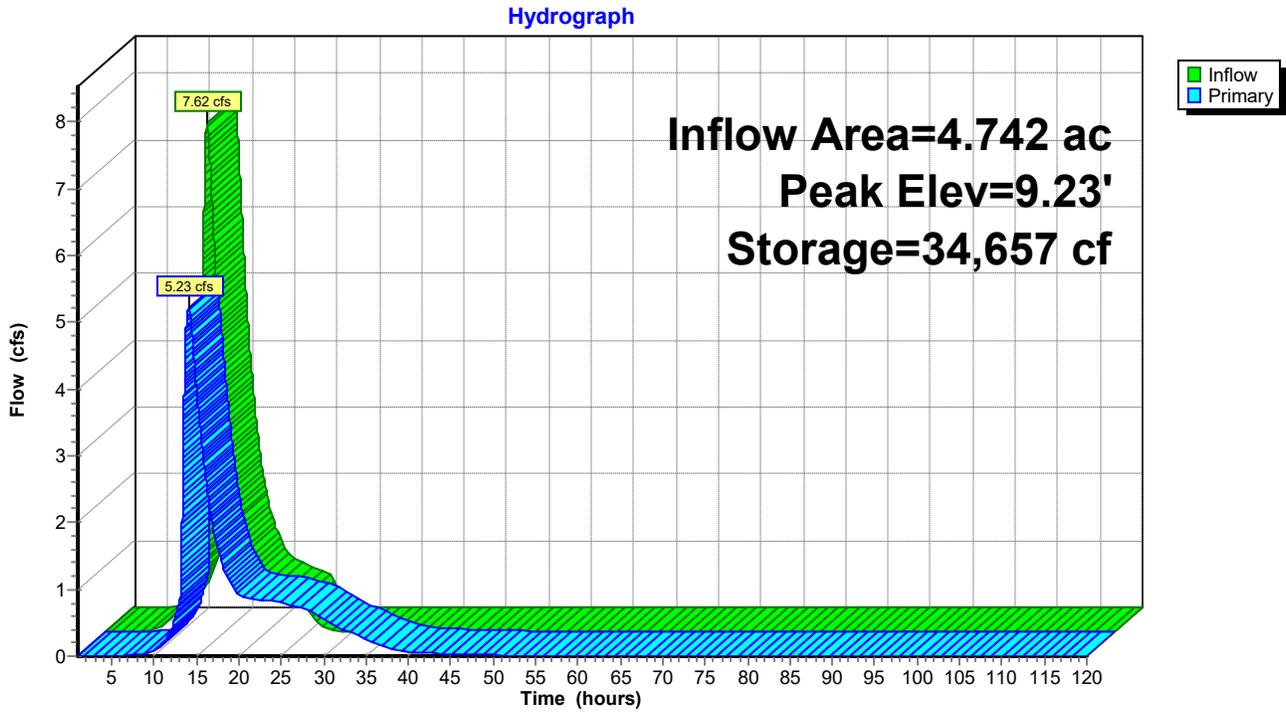
Device	Routing	Invert	Outlet Devices
#1	Primary	7.10'	6.0" Round Culvert L= 57.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.10' / 7.00' S= 0.0018 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.20 sf
#2	Primary	8.92'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.23 cfs @ 14.05 hrs HW=9.23' (Free Discharge)

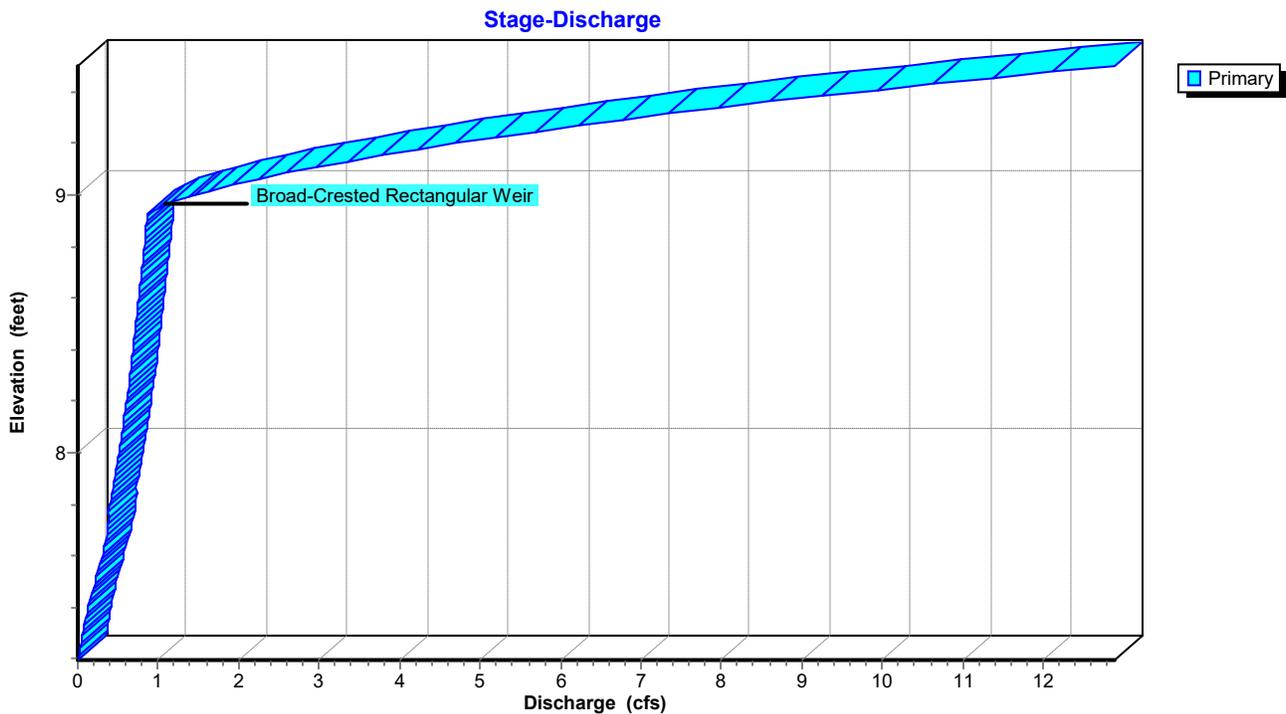
1=Culvert (Barrel Controls 0.95 cfs @ 4.85 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 4.27 cfs @ 1.40 fps)

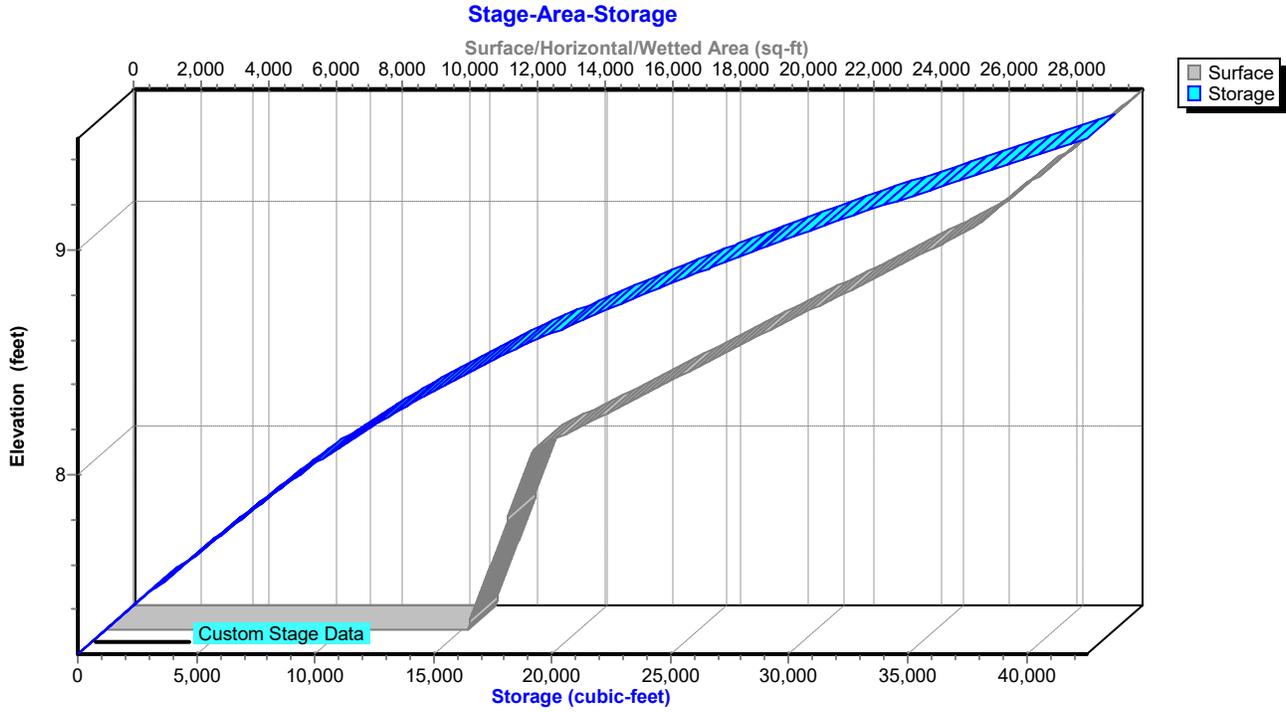
Pond EDB-1: PDA-2 Extended Detention Basin



Pond EDB-1: PDA-2 Extended Detention Basin



Pond EDB-1: PDA-2 Extended Detention Basin



Hydrograph for Pond EDB-1: PDA-2 Extended Detention Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	7.20	0.00	103.00	0.00	0	7.20	0.00
3.00	0.00	0	7.20	0.00	105.00	0.00	0	7.20	0.00
5.00	0.00	0	7.20	0.00	107.00	0.00	0	7.20	0.00
7.00	0.04	18	7.20	0.01	109.00	0.00	0	7.20	0.00
9.00	0.22	694	7.26	0.04	111.00	0.00	0	7.20	0.00
11.00	0.74	3,081	7.48	0.19	113.00	0.00	0	7.20	0.00
13.00	7.56	22,578	8.75	0.81	115.00	0.00	0	7.20	0.00
15.00	3.45	33,076	9.17	4.04	117.00	0.00	0	7.20	0.00
17.00	1.53	29,586	9.04	1.90	119.00	0.00	0	7.20	0.00
19.00	0.89	27,651	8.96	1.09					
21.00	0.66	26,326	8.91	0.86					
23.00	0.56	24,595	8.84	0.84					
25.00	0.33	22,213	8.73	0.81					
27.00	0.06	17,811	8.52	0.73					
29.00	0.01	13,075	8.26	0.63					
31.00	0.00	9,008	7.97	0.50					
33.00	0.00	5,938	7.72	0.38					
35.00	0.00	3,684	7.53	0.24					
37.00	0.00	2,354	7.41	0.14					
39.00	0.00	1,561	7.34	0.09					
41.00	0.00	1,055	7.30	0.06					
43.00	0.00	709	7.27	0.04					
45.00	0.00	460	7.24	0.03					
47.00	0.00	272	7.23	0.02					
49.00	0.00	127	7.21	0.02					
51.00	0.00	11	7.20	0.01					
53.00	0.00	0	7.20	0.00					
55.00	0.00	0	7.20	0.00					
57.00	0.00	0	7.20	0.00					
59.00	0.00	0	7.20	0.00					
61.00	0.00	0	7.20	0.00					
63.00	0.00	0	7.20	0.00					
65.00	0.00	0	7.20	0.00					
67.00	0.00	0	7.20	0.00					
69.00	0.00	0	7.20	0.00					
71.00	0.00	0	7.20	0.00					
73.00	0.00	0	7.20	0.00					
75.00	0.00	0	7.20	0.00					
77.00	0.00	0	7.20	0.00					
79.00	0.00	0	7.20	0.00					
81.00	0.00	0	7.20	0.00					
83.00	0.00	0	7.20	0.00					
85.00	0.00	0	7.20	0.00					
87.00	0.00	0	7.20	0.00					
89.00	0.00	0	7.20	0.00					
91.00	0.00	0	7.20	0.00					
93.00	0.00	0	7.20	0.00					
95.00	0.00	0	7.20	0.00					
97.00	0.00	0	7.20	0.00					
99.00	0.00	0	7.20	0.00					
101.00	0.00	0	7.20	0.00					

Stage-Discharge for Pond EDB-1: PDA-2 Extended Detention Basin

Elevation (feet)	Primary (cfs)								
7.20	0.00	7.71	0.38	8.22	0.61	8.73	0.80	9.24	5.54
7.21	0.02	7.72	0.38	8.23	0.62	8.74	0.81	9.25	5.77
7.22	0.02	7.73	0.38	8.24	0.62	8.75	0.81	9.26	5.99
7.23	0.02	7.74	0.39	8.25	0.63	8.76	0.81	9.27	6.23
7.24	0.03	7.75	0.39	8.26	0.63	8.77	0.82	9.28	6.47
7.25	0.03	7.76	0.38	8.27	0.64	8.78	0.82	9.29	6.71
7.26	0.04	7.77	0.38	8.28	0.64	8.79	0.82	9.30	6.95
7.27	0.04	7.78	0.38	8.29	0.64	8.80	0.83	9.31	7.20
7.28	0.05	7.79	0.39	8.30	0.65	8.81	0.83	9.32	7.45
7.29	0.05	7.80	0.40	8.31	0.65	8.82	0.83	9.33	7.72
7.30	0.06	7.81	0.40	8.32	0.66	8.83	0.84	9.34	7.99
7.31	0.06	7.82	0.41	8.33	0.66	8.84	0.84	9.35	8.26
7.32	0.07	7.83	0.42	8.34	0.66	8.85	0.84	9.36	8.54
7.33	0.08	7.84	0.42	8.35	0.67	8.86	0.85	9.37	8.82
7.34	0.08	7.85	0.43	8.36	0.67	8.87	0.85	9.38	9.11
7.35	0.09	7.86	0.43	8.37	0.68	8.88	0.85	9.39	9.40
7.36	0.10	7.87	0.44	8.38	0.68	8.89	0.85	9.40	9.70
7.37	0.11	7.88	0.45	8.39	0.68	8.90	0.86	9.41	10.00
7.38	0.11	7.89	0.45	8.40	0.69	8.91	0.86	9.42	10.30
7.39	0.12	7.90	0.46	8.41	0.69	8.92	0.86	9.43	10.61
7.40	0.13	7.91	0.46	8.42	0.70	8.93	0.89	9.44	10.92
7.41	0.14	7.92	0.47	8.43	0.70	8.94	0.94	9.45	11.24
7.42	0.14	7.93	0.48	8.44	0.70	8.95	1.00	9.46	11.56
7.43	0.15	7.94	0.48	8.45	0.71	8.96	1.07	9.47	11.89
7.44	0.16	7.95	0.49	8.46	0.71	8.97	1.16	9.48	12.22
7.45	0.17	7.96	0.49	8.47	0.71	8.98	1.25	9.49	12.55
7.46	0.18	7.97	0.50	8.48	0.72	8.99	1.35	9.50	12.89
7.47	0.19	7.98	0.50	8.49	0.72	9.00	1.45		
7.48	0.20	7.99	0.51	8.50	0.72	9.01	1.56		
7.49	0.20	8.00	0.51	8.51	0.73	9.02	1.68		
7.50	0.21	8.01	0.52	8.52	0.73	9.03	1.80		
7.51	0.22	8.02	0.52	8.53	0.74	9.04	1.93		
7.52	0.23	8.03	0.53	8.54	0.74	9.05	2.07		
7.53	0.24	8.04	0.53	8.55	0.74	9.06	2.21		
7.54	0.25	8.05	0.54	8.56	0.75	9.07	2.35		
7.55	0.26	8.06	0.54	8.57	0.75	9.08	2.50		
7.56	0.27	8.07	0.55	8.58	0.75	9.09	2.66		
7.57	0.27	8.08	0.55	8.59	0.76	9.10	2.82		
7.58	0.28	8.09	0.56	8.60	0.76	9.11	2.98		
7.59	0.29	8.10	0.56	8.61	0.76	9.12	3.15		
7.60	0.30	8.11	0.57	8.62	0.77	9.13	3.32		
7.61	0.31	8.12	0.57	8.63	0.77	9.14	3.50		
7.62	0.32	8.13	0.58	8.64	0.77	9.15	3.69		
7.63	0.32	8.14	0.58	8.65	0.78	9.16	3.88		
7.64	0.33	8.15	0.58	8.66	0.78	9.17	4.07		
7.65	0.34	8.16	0.59	8.67	0.78	9.18	4.27		
7.66	0.35	8.17	0.59	8.68	0.79	9.19	4.47		
7.67	0.35	8.18	0.60	8.69	0.79	9.20	4.68		
7.68	0.36	8.19	0.60	8.70	0.79	9.21	4.89		
7.69	0.37	8.20	0.61	8.71	0.80	9.22	5.10		
7.70	0.37	8.21	0.61	8.72	0.80	9.23	5.32		

Stage-Area-Storage for Pond EDB-1: PDA-2 Extended Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
7.20	10,724	0
7.25	10,846	539
7.30	10,968	1,085
7.35	11,090	1,636
7.40	11,212	2,194
7.45	11,333	2,757
7.50	11,455	3,327
7.55	11,577	3,903
7.60	11,699	4,485
7.65	11,821	5,073
7.70	11,943	5,667
7.75	12,065	6,267
7.80	12,187	6,873
7.85	12,308	7,486
7.90	12,430	8,104
7.95	12,552	8,729
8.00	12,674	9,359
8.05	13,332	10,009
8.10	13,990	10,692
8.15	14,648	11,408
8.20	15,306	12,157
8.25	15,964	12,939
8.30	16,621	13,754
8.35	17,279	14,601
8.40	17,937	15,481
8.45	18,595	16,395
8.50	19,253	17,341
8.55	19,911	18,320
8.60	20,569	19,332
8.65	21,227	20,377
8.70	21,885	21,455
8.75	22,543	22,565
8.80	23,200	23,709
8.85	23,858	24,885
8.90	24,516	26,095
8.95	25,174	27,337
9.00	25,832	28,612
9.05	26,243	29,914
9.10	26,654	31,237
9.15	27,066	32,580
9.20	27,477	33,943
9.25	27,888	35,327
9.30	28,299	36,732
9.35	28,710	38,157
9.40	29,122	39,603
9.45	29,533	41,069
9.50	29,944	42,556

Summary for Pond FB-1: Forebay-1

Inflow Area = 8.831 ac, 56.74% Impervious, Inflow Depth = 6.97" for Fv-100YR event
 Inflow = 56.41 cfs @ 12.14 hrs, Volume= 5.132 af
 Outflow = 52.16 cfs @ 12.16 hrs, Volume= 5.131 af, Atten= 8%, Lag= 1.6 min
 Primary = 52.16 cfs @ 12.16 hrs, Volume= 5.131 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 6.30' @ 12.17 hrs Surf.Area= 12,801 sf Storage= 15,572 cf

Plug-Flow detention time= 31.4 min calculated for 5.131 af (100% of inflow)
 Center-of-Mass det. time= 31.3 min (833.4 - 802.1)

Volume	Invert	Avail.Storage	Storage Description
#1	4.80'	26,672 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.80	6,640	0	0
5.00	9,288	1,593	1,593
5.50	10,318	4,902	6,494
6.00	11,527	5,461	11,956
6.50	13,670	6,299	18,255
7.00	20,000	8,418	26,672

Device	Routing	Invert	Outlet Devices
#1	Primary	4.80'	18.0" Round Culvert X 2.00 L= 85.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.80' / 4.50' S= 0.0035 ' / ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	5.55'	30.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

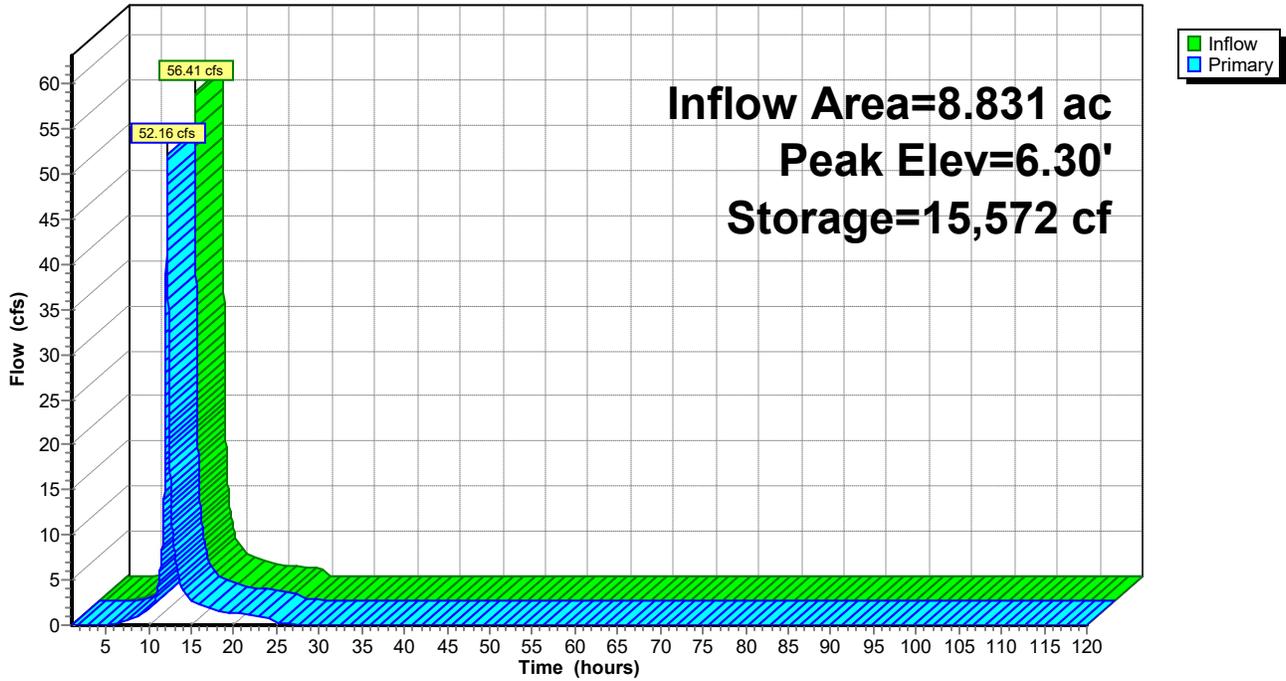
Primary OutFlow Max=51.67 cfs @ 12.16 hrs HW=6.30' TW=5.93' (Dynamic Tailwater)

1=Culvert (Outlet Controls 8.30 cfs @ 2.93 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 43.37 cfs @ 1.94 fps)

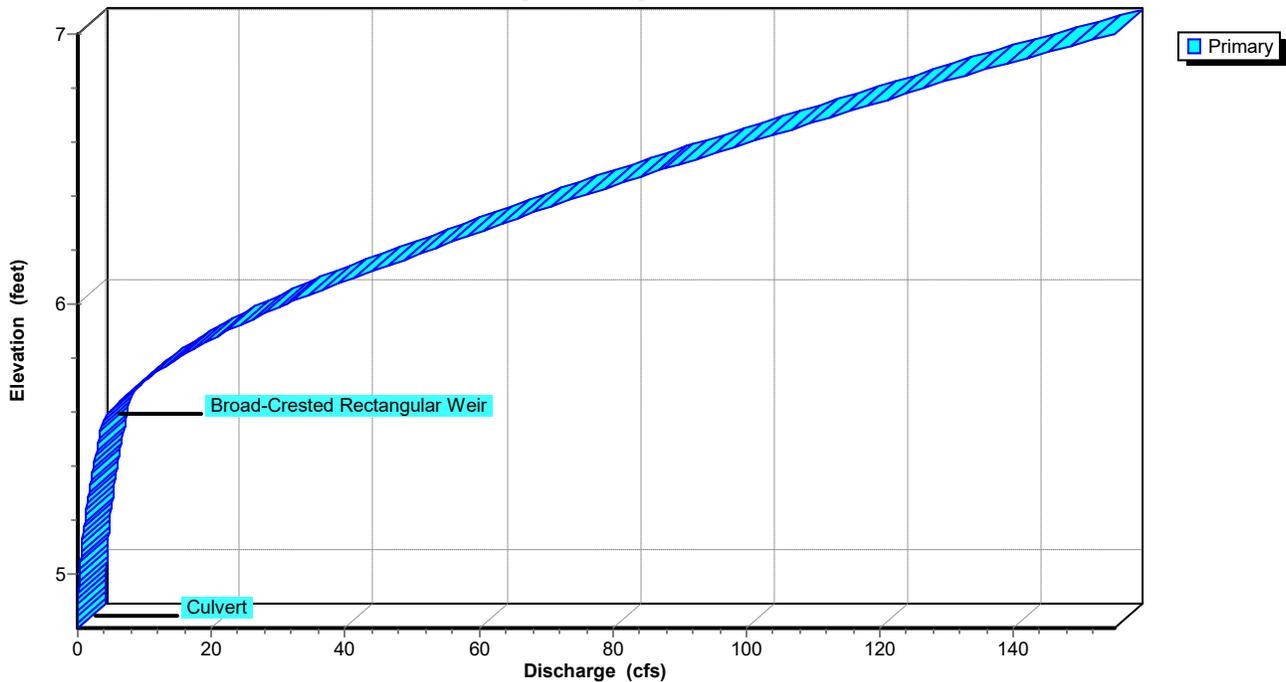
Pond FB-1: Forebay-1

Hydrograph

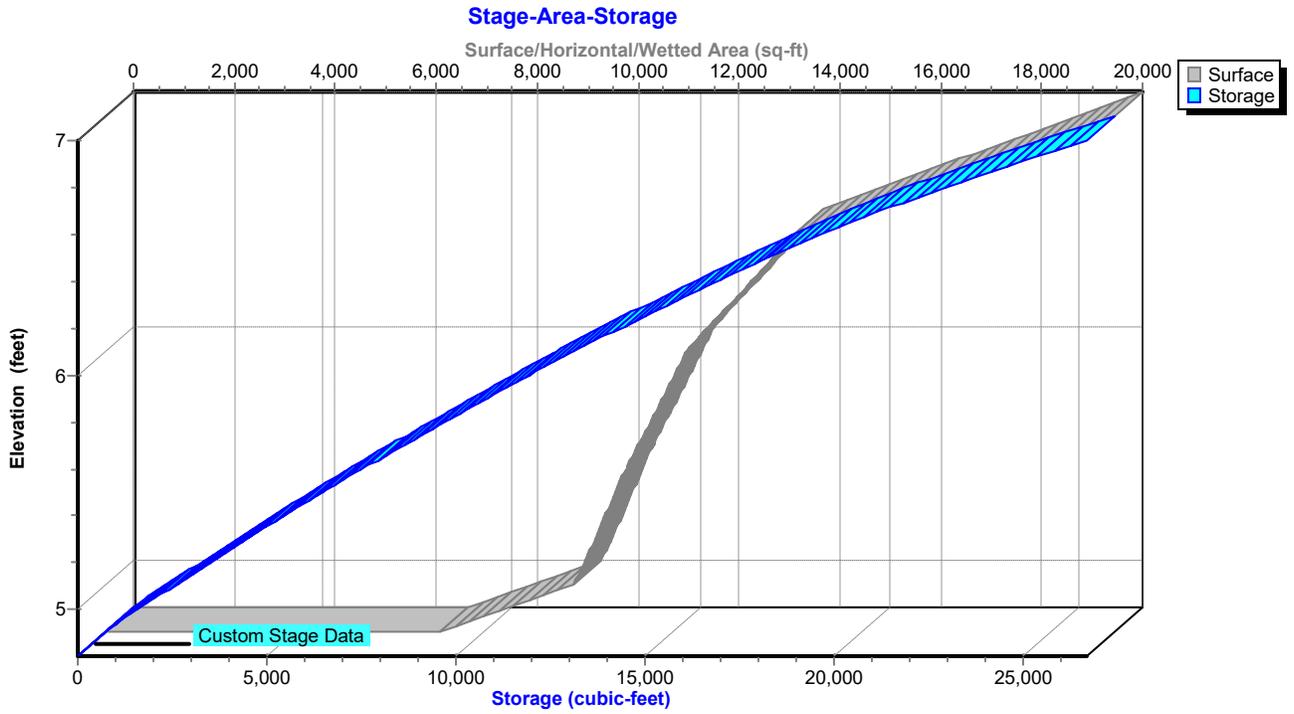


Pond FB-1: Forebay-1

Stage-Discharge



Pond FB-1: Forebay-1



Hydrograph for Pond FB-1: Forebay-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.80	0.00	103.00	0.00	37	4.81	0.00
3.00	0.00	0	4.80	0.00	105.00	0.00	36	4.81	0.00
5.00	0.18	372	4.85	0.02	107.00	0.00	35	4.81	0.00
7.00	0.59	1,878	5.03	0.35	109.00	0.00	34	4.81	0.00
9.00	1.29	3,497	5.20	1.08	111.00	0.00	34	4.81	0.00
11.00	4.51	7,274	5.57	3.56	113.00	0.00	33	4.80	0.00
13.00	7.83	9,014	5.74	8.36	115.00	0.00	32	4.80	0.00
15.00	2.61	7,524	5.60	2.73	117.00	0.00	32	4.80	0.00
17.00	1.77	7,011	5.55	1.89	119.00	0.00	31	4.80	0.00
19.00	1.30	5,685	5.42	1.45					
21.00	1.13	4,769	5.33	1.23					
23.00	0.95	4,105	5.26	1.04					
25.00	0.00	2,181	5.06	0.31					
27.00	0.00	950	4.93	0.09					
29.00	0.00	543	4.88	0.03					
31.00	0.00	376	4.85	0.02					
33.00	0.00	289	4.84	0.01					
35.00	0.00	235	4.83	0.01					
37.00	0.00	199	4.83	0.00					
39.00	0.00	172	4.83	0.00					
41.00	0.00	152	4.82	0.00					
43.00	0.00	137	4.82	0.00					
45.00	0.00	124	4.82	0.00					
47.00	0.00	114	4.82	0.00					
49.00	0.00	105	4.82	0.00					
51.00	0.00	98	4.81	0.00					
53.00	0.00	92	4.81	0.00					
55.00	0.00	86	4.81	0.00					
57.00	0.00	81	4.81	0.00					
59.00	0.00	77	4.81	0.00					
61.00	0.00	73	4.81	0.00					
63.00	0.00	70	4.81	0.00					
65.00	0.00	67	4.81	0.00					
67.00	0.00	64	4.81	0.00					
69.00	0.00	61	4.81	0.00					
71.00	0.00	59	4.81	0.00					
73.00	0.00	57	4.81	0.00					
75.00	0.00	55	4.81	0.00					
77.00	0.00	53	4.81	0.00					
79.00	0.00	51	4.81	0.00					
81.00	0.00	49	4.81	0.00					
83.00	0.00	48	4.81	0.00					
85.00	0.00	46	4.81	0.00					
87.00	0.00	45	4.81	0.00					
89.00	0.00	44	4.81	0.00					
91.00	0.00	43	4.81	0.00					
93.00	0.00	41	4.81	0.00					
95.00	0.00	40	4.81	0.00					
97.00	0.00	39	4.81	0.00					
99.00	0.00	39	4.81	0.00					
101.00	0.00	38	4.81	0.00					

Stage-Discharge for Pond FB-1: Forebay-1

Elevation (feet)	Primary (cfs)								
4.80	0.00	5.31	1.74	5.82	16.41	6.33	67.12	6.84	131.84
4.81	0.00	5.32	1.81	5.83	17.11	6.34	68.27	6.85	133.24
4.82	0.00	5.33	1.87	5.84	17.83	6.35	69.43	6.86	134.65
4.83	0.00	5.34	1.94	5.85	18.57	6.36	70.61	6.87	136.07
4.84	0.01	5.35	2.01	5.86	19.32	6.37	71.80	6.88	137.49
4.85	0.01	5.36	2.08	5.87	20.08	6.38	72.99	6.89	138.91
4.86	0.02	5.37	2.16	5.88	20.85	6.39	74.19	6.90	140.33
4.87	0.03	5.38	2.23	5.89	21.64	6.40	75.40	6.91	141.76
4.88	0.04	5.39	2.30	5.90	22.44	6.41	76.61	6.92	143.19
4.89	0.05	5.40	2.38	5.91	23.26	6.42	77.83	6.93	144.63
4.90	0.06	5.41	2.45	5.92	24.09	6.43	79.05	6.94	146.07
4.91	0.07	5.42	2.53	5.93	24.93	6.44	80.28	6.95	147.51
4.92	0.09	5.43	2.61	5.94	25.79	6.45	81.51	6.96	149.01
4.93	0.11	5.44	2.69	5.95	26.66	6.46	82.75	6.97	150.51
4.94	0.12	5.45	2.76	5.96	27.56	6.47	83.99	6.98	152.01
4.95	0.14	5.46	2.85	5.97	28.48	6.48	85.24	6.99	153.52
4.96	0.16	5.47	2.93	5.98	29.41	6.49	86.50	7.00	155.04
4.97	0.19	5.48	3.01	5.99	30.35	6.50	87.76		
4.98	0.21	5.49	3.09	6.00	31.31	6.51	89.02		
4.99	0.23	5.50	3.18	6.01	32.29	6.52	90.29		
5.00	0.26	5.51	3.26	6.02	33.27	6.53	91.56		
5.01	0.29	5.52	3.35	6.03	34.28	6.54	92.84		
5.02	0.32	5.53	3.43	6.04	35.29	6.55	94.12		
5.03	0.35	5.54	3.52	6.05	36.33	6.56	95.39		
5.04	0.38	5.55	3.61	6.06	37.37	6.57	96.67		
5.05	0.42	5.56	3.77	6.07	38.43	6.58	97.95		
5.06	0.45	5.57	3.99	6.08	39.51	6.59	99.23		
5.07	0.49	5.58	4.24	6.09	40.60	6.60	100.52		
5.08	0.52	5.59	4.53	6.10	41.70	6.61	101.81		
5.09	0.56	5.60	4.85	6.11	42.82	6.62	103.10		
5.10	0.60	5.61	5.19	6.12	43.95	6.63	104.39		
5.11	0.65	5.62	5.56	6.13	45.10	6.64	105.69		
5.12	0.69	5.63	5.94	6.14	46.26	6.65	106.99		
5.13	0.73	5.64	6.35	6.15	47.43	6.66	108.30		
5.14	0.78	5.65	6.77	6.16	48.47	6.67	109.60		
5.15	0.83	5.66	7.21	6.17	49.52	6.68	110.91		
5.16	0.87	5.67	7.67	6.18	50.57	6.69	112.22		
5.17	0.92	5.68	8.15	6.19	51.63	6.70	113.53		
5.18	0.97	5.69	8.64	6.20	52.70	6.71	114.84		
5.19	1.03	5.70	9.14	6.21	53.77	6.72	116.15		
5.20	1.08	5.71	9.66	6.22	54.85	6.73	117.46		
5.21	1.13	5.72	10.19	6.23	55.94	6.74	118.77		
5.22	1.19	5.73	10.74	6.24	57.03	6.75	120.08		
5.23	1.24	5.74	11.29	6.25	58.13	6.76	121.36		
5.24	1.30	5.75	11.87	6.26	59.23	6.77	122.64		
5.25	1.36	5.76	12.47	6.27	60.34	6.78	123.90		
5.26	1.42	5.77	13.09	6.28	61.46	6.79	125.14		
5.27	1.48	5.78	13.72	6.29	62.58	6.80	126.25		
5.28	1.55	5.79	14.37	6.30	63.71	6.81	127.64		
5.29	1.61	5.80	15.04	6.31	64.84	6.82	129.04		
5.30	1.67	5.81	15.71	6.32	65.98	6.83	130.43		

Stage-Area-Storage for Pond FB-1: Forebay-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.80	6,640	0
4.85	7,302	349
4.90	7,964	730
4.95	8,626	1,145
5.00	9,288	1,593
5.05	9,391	2,060
5.10	9,494	2,532
5.15	9,597	3,009
5.20	9,700	3,492
5.25	9,803	3,979
5.30	9,906	4,472
5.35	10,009	4,970
5.40	10,112	5,473
5.45	10,215	5,981
5.50	10,318	6,494
5.55	10,439	7,013
5.60	10,560	7,538
5.65	10,681	8,069
5.70	10,802	8,606
5.75	10,923	9,149
5.80	11,043	9,699
5.85	11,164	10,254
5.90	11,285	10,815
5.95	11,406	11,382
6.00	11,527	11,956
6.05	11,741	12,537
6.10	11,956	13,130
6.15	12,170	13,733
6.20	12,384	14,347
6.25	12,599	14,971
6.30	12,813	15,607
6.35	13,027	16,253
6.40	13,241	16,909
6.45	13,456	17,577
6.50	13,670	18,255
6.55	14,303	18,954
6.60	14,936	19,685
6.65	15,569	20,448
6.70	16,202	21,242
6.75	16,835	22,068
6.80	17,468	22,926
6.85	18,101	23,815
6.90	18,734	24,736
6.95	19,367	25,688
7.00	20,000	26,672

Summary for Pond FB-2: Forebay-2

Inflow Area = 2.146 ac, 55.72% Impervious, Inflow Depth = 7.13" for Fv-100YR event
 Inflow = 14.98 cfs @ 12.13 hrs, Volume= 1.275 af
 Outflow = 13.89 cfs @ 12.14 hrs, Volume= 1.275 af, Atten= 7%, Lag= 0.9 min
 Primary = 13.89 cfs @ 12.14 hrs, Volume= 1.275 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 6.07' @ 12.16 hrs Surf.Area= 4,314 sf Storage= 4,495 cf

Plug-Flow detention time= 37.7 min calculated for 1.275 af (100% of inflow)
 Center-of-Mass det. time= 37.6 min (835.6 - 798.0)

Volume	Invert	Avail.Storage	Storage Description
#1	4.80'	12,665 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.80	2,476	0	0
5.00	3,049	553	553
5.50	3,625	1,669	2,221
6.00	4,222	1,962	4,183
6.50	4,854	2,269	6,452
7.00	20,000	6,214	12,665

Device	Routing	Invert	Outlet Devices
#1	Primary	4.80'	12.0" Round Culvert L= 48.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.80' / 4.50' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	5.65'	23.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

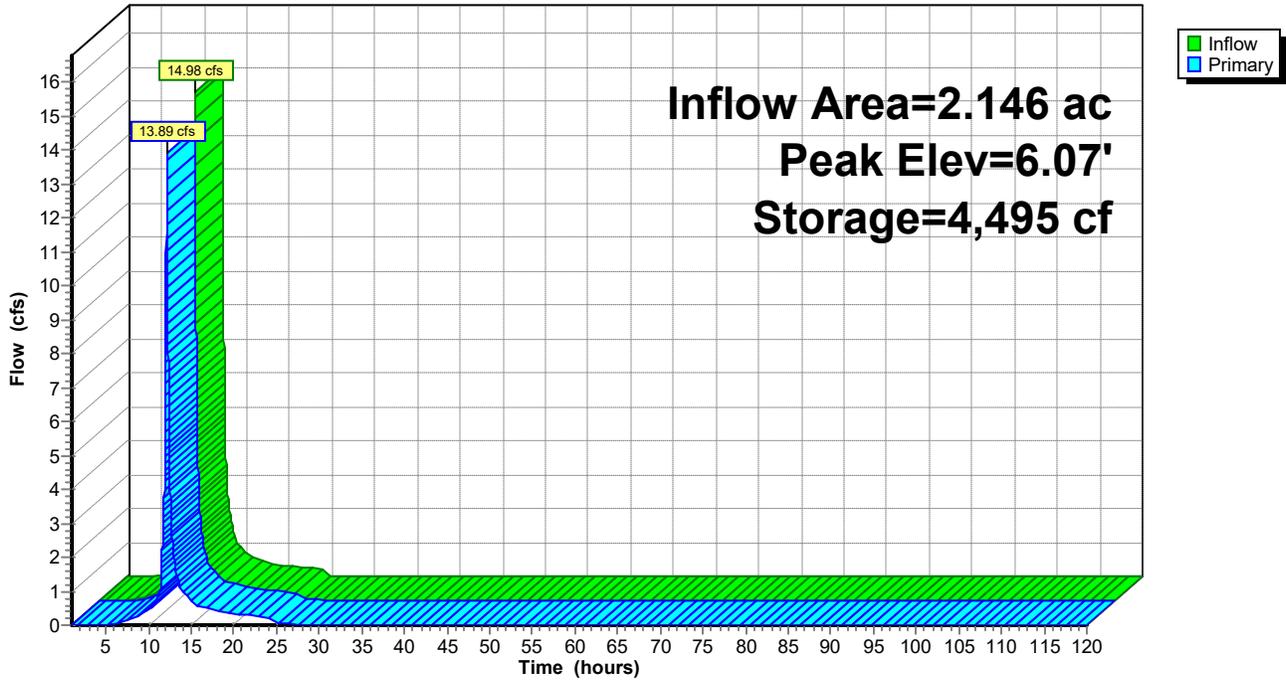
Primary OutFlow Max=13.47 cfs @ 12.14 hrs HW=6.07' TW=5.91' (Dynamic Tailwater)

1=Culvert (Outlet Controls 1.46 cfs @ 1.90 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 12.01 cfs @ 1.25 fps)

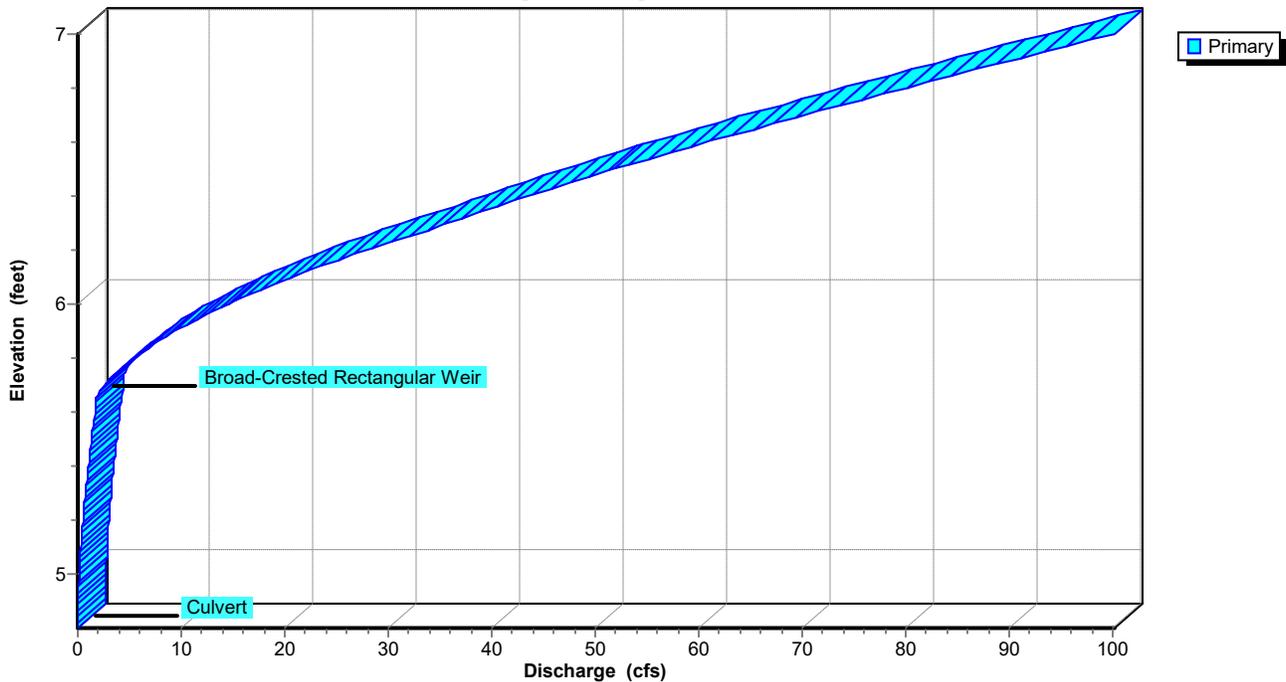
Pond FB-2: Forebay-2

Hydrograph

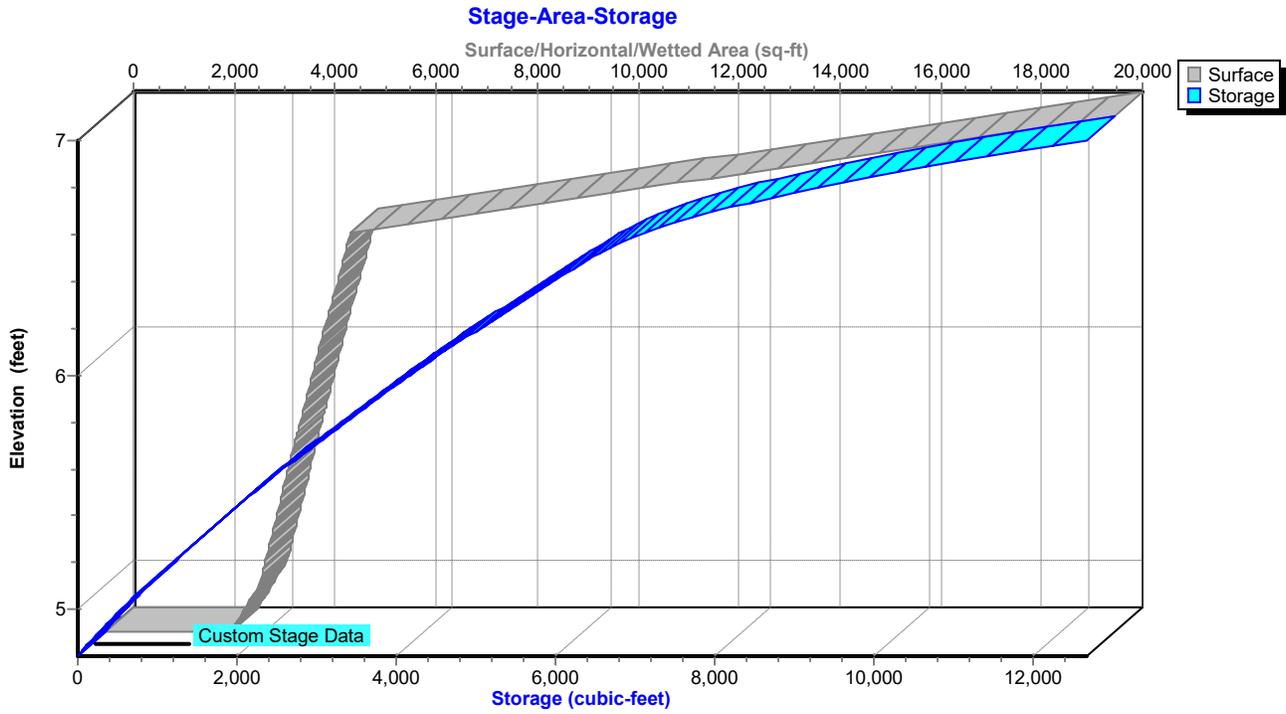


Pond FB-2: Forebay-2

Stage-Discharge



Pond FB-2: Forebay-2



Hydrograph for Pond FB-2: Forebay-2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.80	0.00	103.00	0.00	10	4.80	0.00
3.00	0.00	0	4.80	0.00	105.00	0.00	10	4.80	0.00
5.00	0.06	132	4.85	0.01	107.00	0.00	9	4.80	0.00
7.00	0.16	498	4.98	0.11	109.00	0.00	9	4.80	0.00
9.00	0.34	877	5.10	0.27	111.00	0.00	9	4.80	0.00
11.00	1.16	1,989	5.44	0.80	113.00	0.00	9	4.80	0.00
13.00	1.89	3,042	5.72	1.98	115.00	0.00	9	4.80	0.00
15.00	0.64	2,517	5.58	0.72	117.00	0.00	8	4.80	0.00
17.00	0.43	2,160	5.48	0.49	119.00	0.00	8	4.80	0.00
19.00	0.32	1,688	5.35	0.38					
21.00	0.28	1,345	5.25	0.31					
23.00	0.23	1,114	5.18	0.26					
25.00	0.00	591	5.01	0.08					
27.00	0.00	249	4.90	0.02					
29.00	0.00	141	4.86	0.01					
31.00	0.00	97	4.84	0.00					
33.00	0.00	74	4.83	0.00					
35.00	0.00	61	4.82	0.00					
37.00	0.00	51	4.82	0.00					
39.00	0.00	45	4.82	0.00					
41.00	0.00	40	4.82	0.00					
43.00	0.00	36	4.81	0.00					
45.00	0.00	33	4.81	0.00					
47.00	0.00	30	4.81	0.00					
49.00	0.00	28	4.81	0.00					
51.00	0.00	26	4.81	0.00					
53.00	0.00	24	4.81	0.00					
55.00	0.00	23	4.81	0.00					
57.00	0.00	21	4.81	0.00					
59.00	0.00	20	4.81	0.00					
61.00	0.00	19	4.81	0.00					
63.00	0.00	18	4.81	0.00					
65.00	0.00	18	4.81	0.00					
67.00	0.00	17	4.81	0.00					
69.00	0.00	16	4.81	0.00					
71.00	0.00	16	4.81	0.00					
73.00	0.00	15	4.81	0.00					
75.00	0.00	14	4.81	0.00					
77.00	0.00	14	4.81	0.00					
79.00	0.00	13	4.81	0.00					
81.00	0.00	13	4.81	0.00					
83.00	0.00	13	4.81	0.00					
85.00	0.00	12	4.80	0.00					
87.00	0.00	12	4.80	0.00					
89.00	0.00	12	4.80	0.00					
91.00	0.00	11	4.80	0.00					
93.00	0.00	11	4.80	0.00					
95.00	0.00	11	4.80	0.00					
97.00	0.00	10	4.80	0.00					
99.00	0.00	10	4.80	0.00					
101.00	0.00	10	4.80	0.00					

Stage-Discharge for Pond FB-2: Forebay-2

Elevation (feet)	Primary (cfs)								
4.80	0.00	5.31	0.78	5.82	6.18	6.33	38.03	6.84	83.94
4.81	0.00	5.32	0.81	5.83	6.55	6.34	38.81	6.85	84.95
4.82	0.00	5.33	0.84	5.84	6.93	6.35	39.59	6.86	85.94
4.83	0.00	5.34	0.87	5.85	7.32	6.36	40.37	6.87	86.94
4.84	0.00	5.35	0.89	5.86	7.74	6.37	41.16	6.88	87.95
4.85	0.01	5.36	0.92	5.87	8.16	6.38	41.96	6.89	88.95
4.86	0.01	5.37	0.95	5.88	8.60	6.39	42.76	6.90	89.96
4.87	0.01	5.38	0.98	5.89	9.04	6.40	43.56	6.91	90.98
4.88	0.02	5.39	1.01	5.90	9.50	6.41	44.37	6.92	91.99
4.89	0.03	5.40	1.04	5.91	9.97	6.42	45.18	6.93	93.01
4.90	0.03	5.41	1.07	5.92	10.44	6.43	46.00	6.94	94.03
4.91	0.04	5.42	1.10	5.93	10.93	6.44	46.82	6.95	95.06
4.92	0.05	5.43	1.13	5.94	11.43	6.45	47.65	6.96	96.09
4.93	0.05	5.44	1.16	5.95	11.93	6.46	48.50	6.97	97.12
4.94	0.06	5.45	1.19	5.96	12.45	6.47	49.35	6.98	98.16
4.95	0.07	5.46	1.22	5.97	12.97	6.48	50.21	6.99	99.19
4.96	0.08	5.47	1.25	5.98	13.51	6.49	51.07	7.00	100.24
4.97	0.09	5.48	1.28	5.99	14.05	6.50	51.94		
4.98	0.11	5.49	1.31	6.00	14.61	6.51	52.81		
4.99	0.12	5.50	1.35	6.01	15.17	6.52	53.69		
5.00	0.13	5.51	1.38	6.02	15.74	6.53	54.57		
5.01	0.14	5.52	1.41	6.03	16.32	6.54	55.46		
5.02	0.16	5.53	1.44	6.04	16.91	6.55	56.35		
5.03	0.17	5.54	1.47	6.05	17.51	6.56	57.25		
5.04	0.19	5.55	1.50	6.06	18.13	6.57	58.15		
5.05	0.20	5.56	1.54	6.07	18.76	6.58	59.06		
5.06	0.22	5.57	1.57	6.08	19.40	6.59	59.97		
5.07	0.24	5.58	1.60	6.09	20.05	6.60	60.89		
5.08	0.26	5.59	1.63	6.10	20.70	6.61	61.81		
5.09	0.27	5.60	1.67	6.11	21.37	6.62	62.73		
5.10	0.29	5.61	1.70	6.12	22.04	6.63	63.66		
5.11	0.31	5.62	1.73	6.13	22.70	6.64	64.60		
5.12	0.33	5.63	1.76	6.14	23.38	6.65	65.54		
5.13	0.35	5.64	1.79	6.15	24.11	6.66	66.47		
5.14	0.37	5.65	1.83	6.16	24.85	6.67	67.41		
5.15	0.39	5.66	1.91	6.17	25.61	6.68	68.35		
5.16	0.41	5.67	2.05	6.18	26.37	6.69	69.29		
5.17	0.43	5.68	2.21	6.19	27.14	6.70	70.24		
5.18	0.46	5.69	2.39	6.20	27.93	6.71	71.19		
5.19	0.48	5.70	2.60	6.21	28.72	6.72	72.15		
5.20	0.50	5.71	2.82	6.22	29.53	6.73	73.11		
5.21	0.53	5.72	3.06	6.23	30.34	6.74	74.08		
5.22	0.55	5.73	3.32	6.24	31.17	6.75	75.04		
5.23	0.57	5.74	3.59	6.25	32.01	6.76	76.02		
5.24	0.60	5.75	3.87	6.26	32.74	6.77	76.99		
5.25	0.62	5.76	4.17	6.27	33.48	6.78	77.97		
5.26	0.65	5.77	4.47	6.28	34.23	6.79	78.96		
5.27	0.68	5.78	4.79	6.29	34.98	6.80	79.95		
5.28	0.70	5.79	5.13	6.30	35.73	6.81	80.94		
5.29	0.73	5.80	5.47	6.31	36.49	6.82	81.94		
5.30	0.75	5.81	5.82	6.32	37.26	6.83	82.94		

Stage-Area-Storage for Pond FB-2: Forebay-2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.80	2,476	0
4.85	2,619	127
4.90	2,762	262
4.95	2,906	404
5.00	3,049	553
5.05	3,107	706
5.10	3,164	863
5.15	3,222	1,023
5.20	3,279	1,185
5.25	3,337	1,351
5.30	3,395	1,519
5.35	3,452	1,690
5.40	3,510	1,864
5.45	3,567	2,041
5.50	3,625	2,221
5.55	3,685	2,404
5.60	3,744	2,589
5.65	3,804	2,778
5.70	3,864	2,970
5.75	3,924	3,165
5.80	3,983	3,362
5.85	4,043	3,563
5.90	4,103	3,767
5.95	4,162	3,973
6.00	4,222	4,183
6.05	4,285	4,395
6.10	4,348	4,611
6.15	4,412	4,830
6.20	4,475	5,052
6.25	4,538	5,278
6.30	4,601	5,506
6.35	4,664	5,738
6.40	4,728	5,973
6.45	4,791	6,211
6.50	4,854	6,452
6.55	6,369	6,732
6.60	7,883	7,089
6.65	9,398	7,521
6.70	10,912	8,028
6.75	12,427	8,612
6.80	13,942	9,271
6.85	15,456	10,006
6.90	16,971	10,817
6.95	18,485	11,703
7.00	20,000	12,665

Summary for Pond LS: Level Spreader 1NPDES Outfall #2

Inflow Area = 6.001 ac, 37.57% Impervious, Inflow Depth = 5.14" for Fv-100YR event
 Inflow = 7.55 cfs @ 13.08 hrs, Volume= 2.568 af
 Outflow = 7.55 cfs @ 13.08 hrs, Volume= 2.568 af, Atten= 0%, Lag= 0.0 min
 Primary = 7.55 cfs @ 13.08 hrs, Volume= 2.568 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 5.54' @ 13.08 hrs

Flood Elev= 11.00'

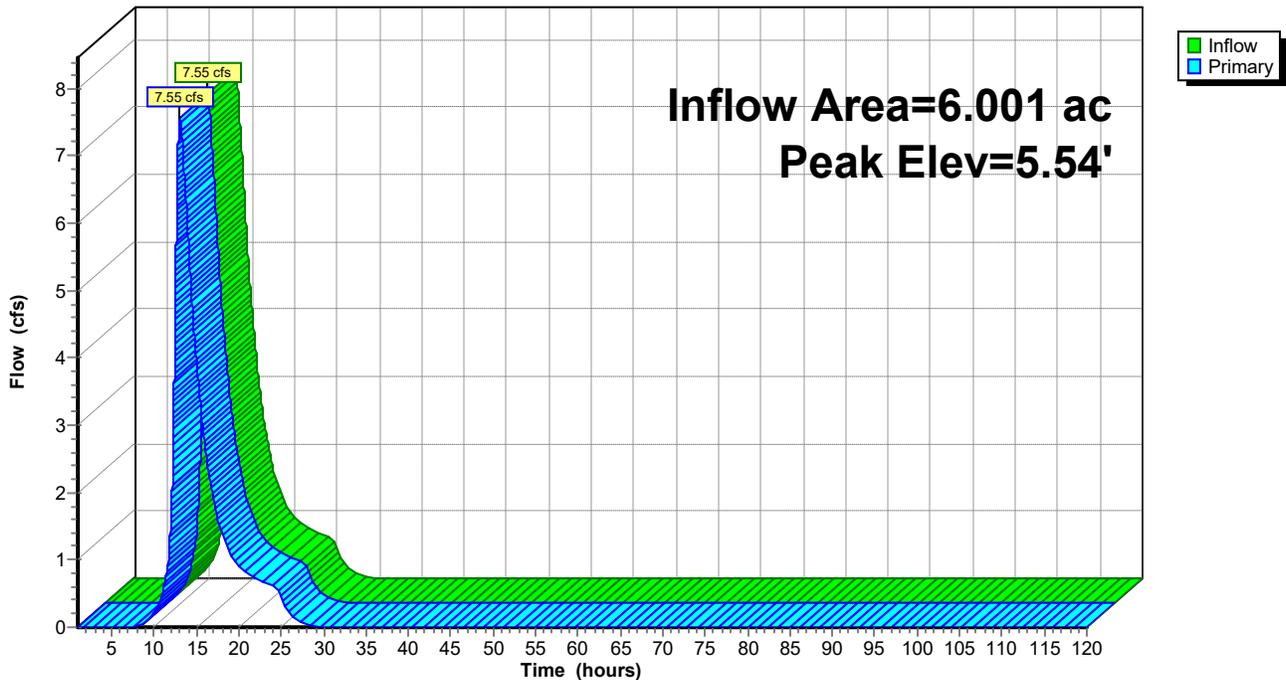
Device	Routing	Invert	Outlet Devices
#1	Primary	5.40'	45.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=7.55 cfs @ 13.08 hrs HW=5.54' (Free Discharge)

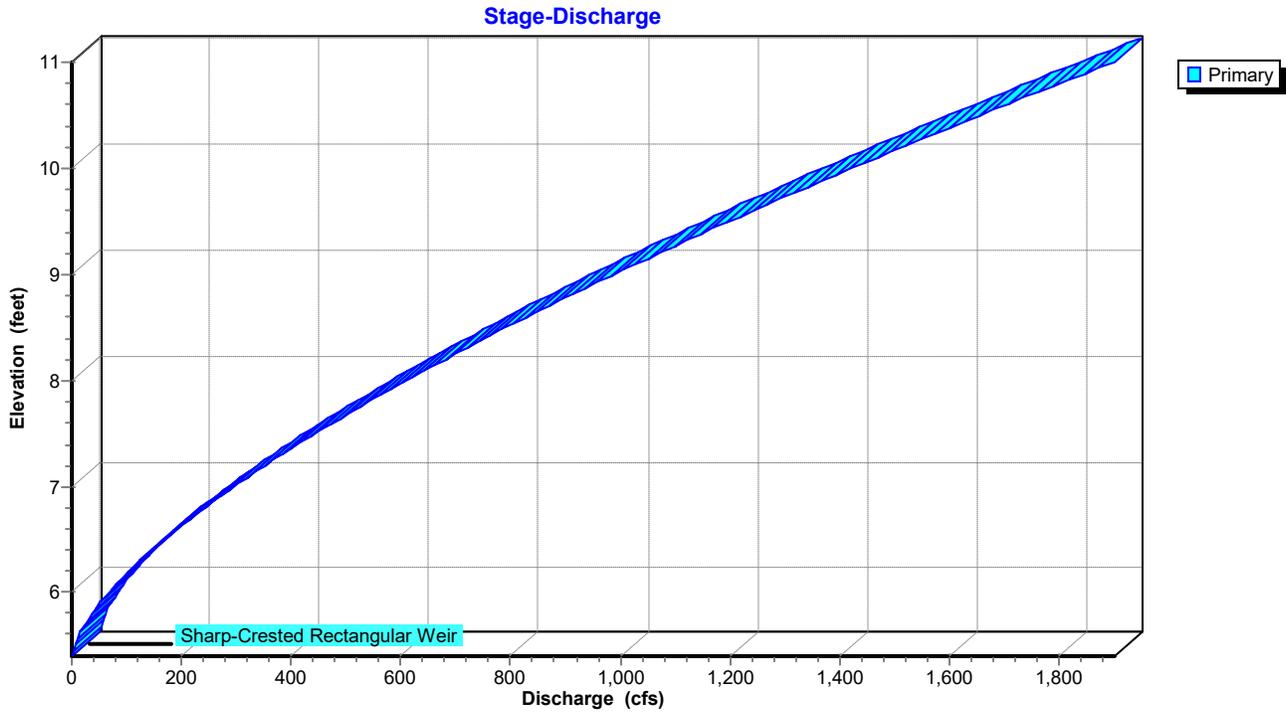
↳ 1=Sharp-Crested Rectangular Weir (Weir Controls 7.55 cfs @ 1.22 fps)

Pond LS: Level Spreader 1NPDES Outfall #2

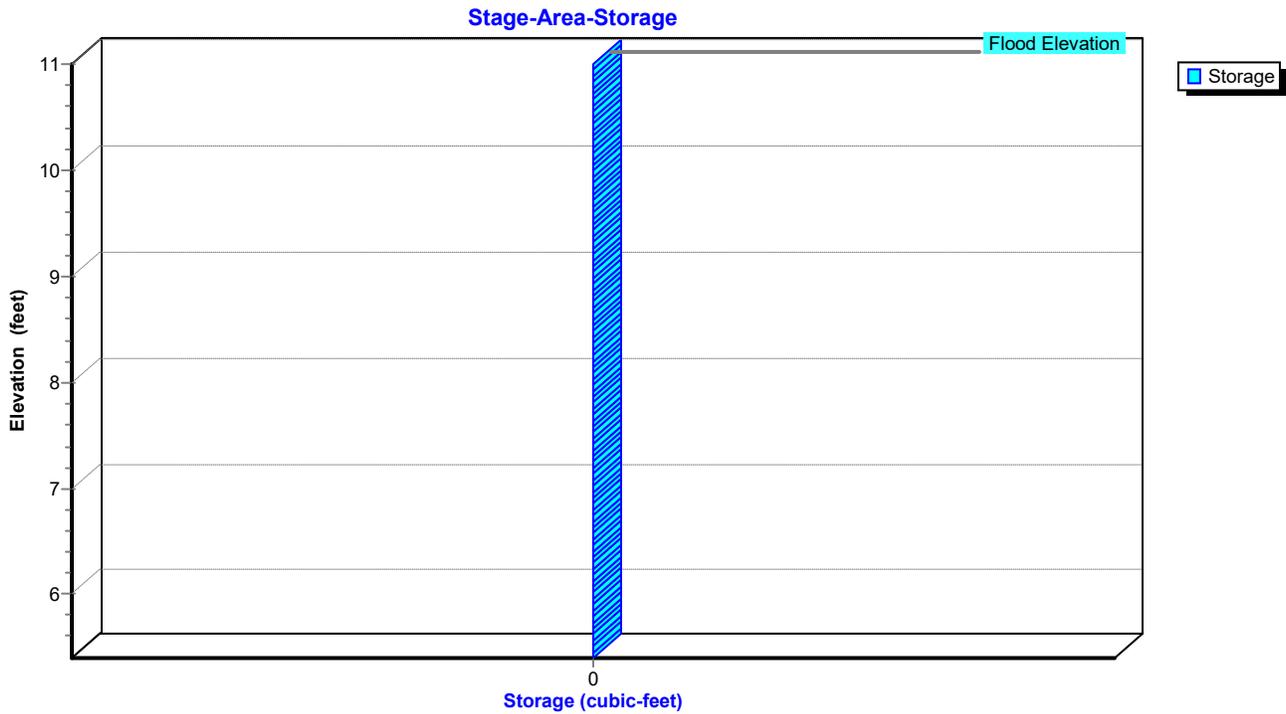
Hydrograph



Pond LS: Level Spreader 1NPDES Outfall #2



Pond LS: Level Spreader 1NPDES Outfall #2



Hydrograph for Pond LS: Level Spreader 1NPDES Outfall #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	5.40	0.00	103.00	0.00	5.40	0.00
3.00	0.00	5.40	0.00	105.00	0.00	5.40	0.00
5.00	0.00	5.40	0.00	107.00	0.00	5.40	0.00
7.00	0.00	5.40	0.00	109.00	0.00	5.40	0.00
9.00	0.07	5.41	0.07	111.00	0.00	5.40	0.00
11.00	0.50	5.42	0.50	113.00	0.00	5.40	0.00
13.00	7.51	5.54	7.51	115.00	0.00	5.40	0.00
15.00	3.95	5.49	3.95	117.00	0.00	5.40	0.00
17.00	1.90	5.46	1.90	119.00	0.00	5.40	0.00
19.00	1.09	5.44	1.09				
21.00	0.80	5.43	0.80				
23.00	0.67	5.43	0.67				
25.00	0.42	5.42	0.42				
27.00	0.09	5.41	0.09				
29.00	0.01	5.40	0.01				
31.00	0.00	5.40	0.00				
33.00	0.00	5.40	0.00				
35.00	0.00	5.40	0.00				
37.00	0.00	5.40	0.00				
39.00	0.00	5.40	0.00				
41.00	0.00	5.40	0.00				
43.00	0.00	5.40	0.00				
45.00	0.00	5.40	0.00				
47.00	0.00	5.40	0.00				
49.00	0.00	5.40	0.00				
51.00	0.00	5.40	0.00				
53.00	0.00	5.40	0.00				
55.00	0.00	5.40	0.00				
57.00	0.00	5.40	0.00				
59.00	0.00	5.40	0.00				
61.00	0.00	5.40	0.00				
63.00	0.00	5.40	0.00				
65.00	0.00	5.40	0.00				
67.00	0.00	5.40	0.00				
69.00	0.00	5.40	0.00				
71.00	0.00	5.40	0.00				
73.00	0.00	5.40	0.00				
75.00	0.00	5.40	0.00				
77.00	0.00	5.40	0.00				
79.00	0.00	5.40	0.00				
81.00	0.00	5.40	0.00				
83.00	0.00	5.40	0.00				
85.00	0.00	5.40	0.00				
87.00	0.00	5.40	0.00				
89.00	0.00	5.40	0.00				
91.00	0.00	5.40	0.00				
93.00	0.00	5.40	0.00				
95.00	0.00	5.40	0.00				
97.00	0.00	5.40	0.00				
99.00	0.00	5.40	0.00				
101.00	0.00	5.40	0.00				

Stage-Discharge for Pond LS: Level Spreader 1NPDES Outfall #2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
5.40	0.00	7.44	424.86	9.48	1,190.70
5.44	1.18	7.48	437.34	9.52	1,208.04
5.48	3.33	7.52	449.94	9.56	1,225.45
5.52	6.11	7.56	462.65	9.60	1,242.94
5.56	9.41	7.60	475.47	9.64	1,260.51
5.60	13.15	7.64	488.41	9.68	1,278.16
5.64	17.28	7.68	501.46	9.72	1,295.88
5.68	21.77	7.72	514.63	9.76	1,313.69
5.72	26.60	7.76	527.90	9.80	1,331.56
5.76	31.73	7.80	541.28	9.84	1,349.52
5.80	37.16	7.84	554.77	9.88	1,367.55
5.84	42.86	7.88	568.36	9.92	1,385.65
5.88	48.83	7.92	582.06	9.96	1,403.83
5.92	55.05	7.96	595.87	10.00	1,422.09
5.96	61.51	8.00	609.78	10.04	1,440.41
6.00	68.21	8.04	623.79	10.08	1,458.82
6.04	75.13	8.08	637.91	10.12	1,477.29
6.08	82.26	8.12	652.13	10.16	1,495.84
6.12	89.61	8.16	666.44	10.20	1,514.46
6.16	97.17	8.20	680.86	10.24	1,533.15
6.20	104.92	8.24	695.38	10.28	1,551.91
6.24	112.86	8.28	709.99	10.32	1,570.75
6.28	121.00	8.32	724.71	10.36	1,589.65
6.32	129.32	8.36	739.51	10.40	1,608.63
6.36	137.82	8.40	754.42	10.44	1,627.67
6.40	146.50	8.44	769.42	10.48	1,646.79
6.44	155.35	8.48	784.51	10.52	1,665.97
6.48	164.36	8.52	799.70	10.56	1,685.23
6.52	173.55	8.56	814.98	10.60	1,704.55
6.56	182.90	8.60	830.36	10.64	1,723.94
6.60	192.40	8.64	845.82	10.68	1,743.40
6.64	202.07	8.68	861.38	10.72	1,762.93
6.68	211.88	8.72	877.02	10.76	1,782.53
6.72	221.85	8.76	892.76	10.80	1,802.19
6.76	231.97	8.80	908.59	10.84	1,821.92
6.80	242.24	8.84	924.50	10.88	1,841.72
6.84	252.65	8.88	940.50	10.92	1,861.58
6.88	263.20	8.92	956.59	10.96	1,881.51
6.92	273.89	8.96	972.77	11.00	1,901.50
6.96	284.72	9.00	989.03		
7.00	295.69	9.04	1,005.38		
7.04	306.80	9.08	1,021.81		
7.08	318.03	9.12	1,038.33		
7.12	329.40	9.16	1,054.93		
7.16	340.89	9.20	1,071.61		
7.20	352.52	9.24	1,088.38		
7.24	364.27	9.28	1,105.23		
7.28	376.14	9.32	1,122.16		
7.32	388.14	9.36	1,139.18		
7.36	400.26	9.40	1,156.27		
7.40	412.50	9.44	1,173.45		

Stage-Area-Storage for Pond LS: Level Spreader 1NPDES Outfall #2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
5.40	0	7.44	0	9.48	0
5.44	0	7.48	0	9.52	0
5.48	0	7.52	0	9.56	0
5.52	0	7.56	0	9.60	0
5.56	0	7.60	0	9.64	0
5.60	0	7.64	0	9.68	0
5.64	0	7.68	0	9.72	0
5.68	0	7.72	0	9.76	0
5.72	0	7.76	0	9.80	0
5.76	0	7.80	0	9.84	0
5.80	0	7.84	0	9.88	0
5.84	0	7.88	0	9.92	0
5.88	0	7.92	0	9.96	0
5.92	0	7.96	0	10.00	0
5.96	0	8.00	0	10.04	0
6.00	0	8.04	0	10.08	0
6.04	0	8.08	0	10.12	0
6.08	0	8.12	0	10.16	0
6.12	0	8.16	0	10.20	0
6.16	0	8.20	0	10.24	0
6.20	0	8.24	0	10.28	0
6.24	0	8.28	0	10.32	0
6.28	0	8.32	0	10.36	0
6.32	0	8.36	0	10.40	0
6.36	0	8.40	0	10.44	0
6.40	0	8.44	0	10.48	0
6.44	0	8.48	0	10.52	0
6.48	0	8.52	0	10.56	0
6.52	0	8.56	0	10.60	0
6.56	0	8.60	0	10.64	0
6.60	0	8.64	0	10.68	0
6.64	0	8.68	0	10.72	0
6.68	0	8.72	0	10.76	0
6.72	0	8.76	0	10.80	0
6.76	0	8.80	0	10.84	0
6.80	0	8.84	0	10.88	0
6.84	0	8.88	0	10.92	0
6.88	0	8.92	0	10.96	0
6.92	0	8.96	0	11.00	0
6.96	0	9.00	0		
7.00	0	9.04	0		
7.04	0	9.08	0		
7.08	0	9.12	0		
7.12	0	9.16	0		
7.16	0	9.20	0		
7.20	0	9.24	0		
7.24	0	9.28	0		
7.28	0	9.32	0		
7.32	0	9.36	0		
7.36	0	9.40	0		
7.40	0	9.44	0		

Summary for Pond LS-1: Level Spreader 1 NPDES Outfall #2

Inflow Area = 6.498 ac, 42.35% Impervious, Inflow Depth = 5.39" for Fv-100YR event
 Inflow = 9.07 cfs @ 12.96 hrs, Volume= 2.917 af
 Outflow = 9.07 cfs @ 12.96 hrs, Volume= 2.917 af, Atten= 0%, Lag= 0.0 min
 Primary = 9.07 cfs @ 12.96 hrs, Volume= 2.917 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 5.56' @ 12.96 hrs

Flood Elev= 11.00'

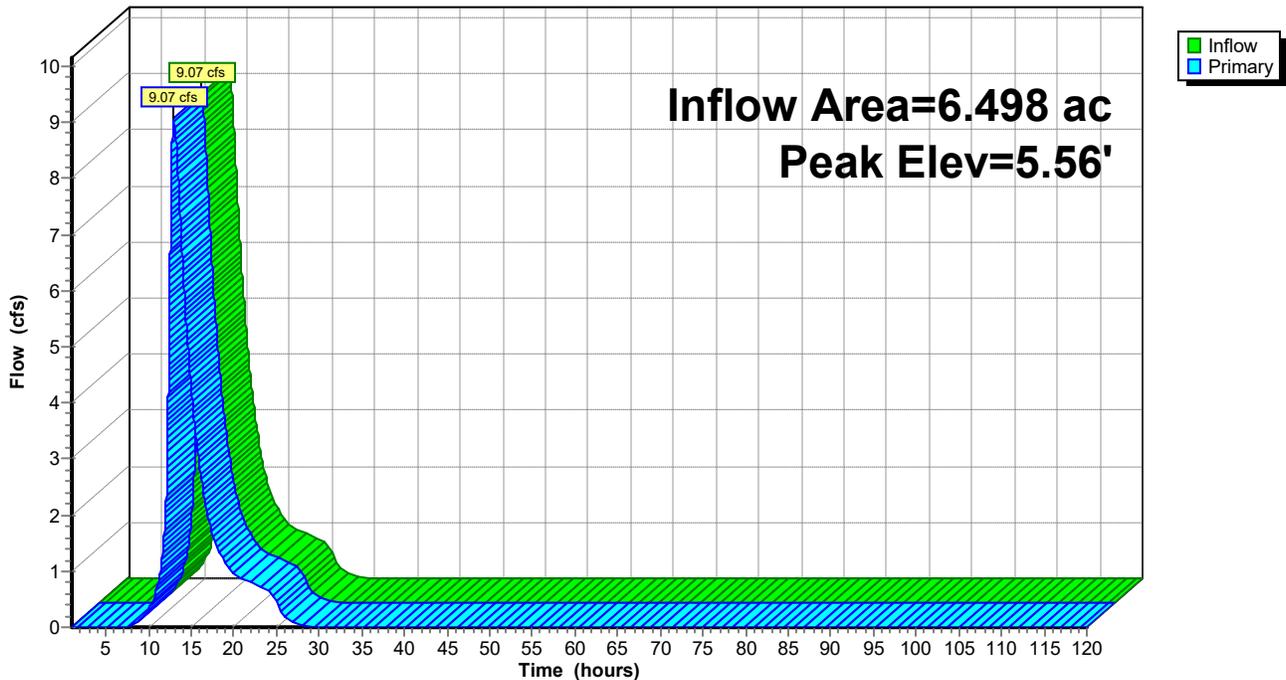
Device	Routing	Invert	Outlet Devices
#1	Primary	5.40'	45.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=9.07 cfs @ 12.96 hrs HW=5.56' (Free Discharge)

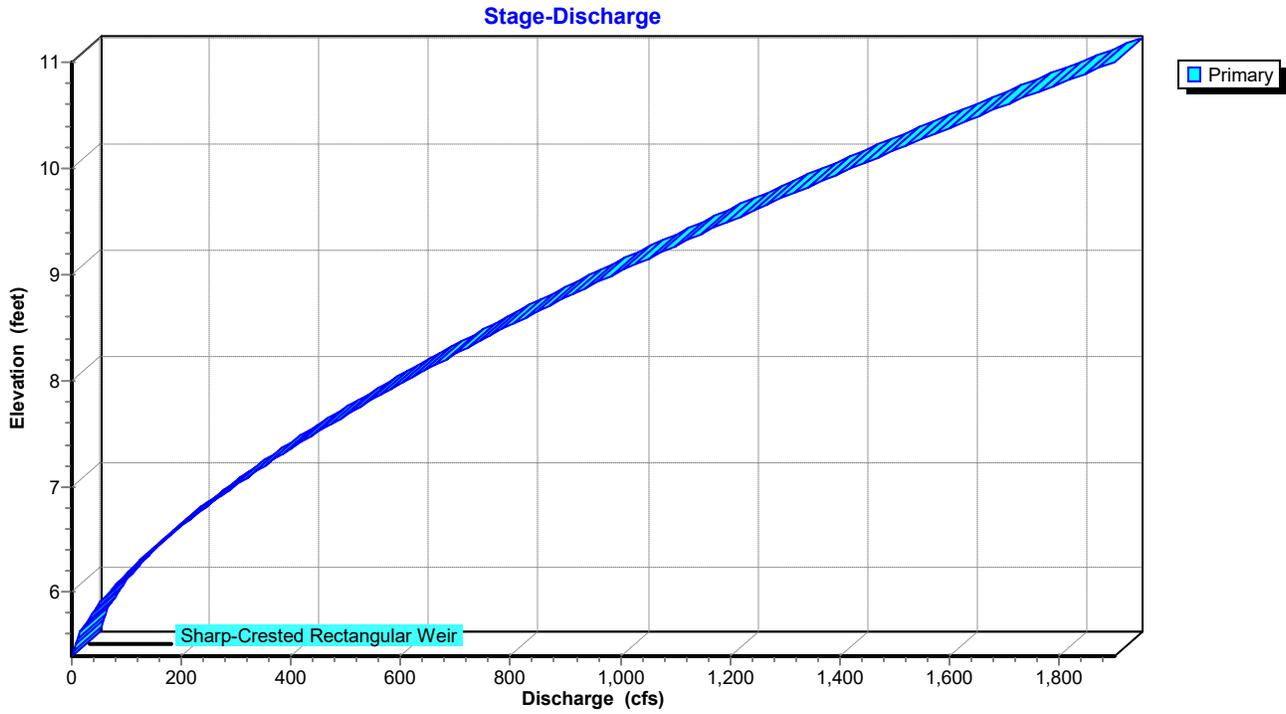
↳1=Sharp-Crested Rectangular Weir (Weir Controls 9.07 cfs @ 1.29 fps)

Pond LS-1: Level Spreader 1 NPDES Outfall #2

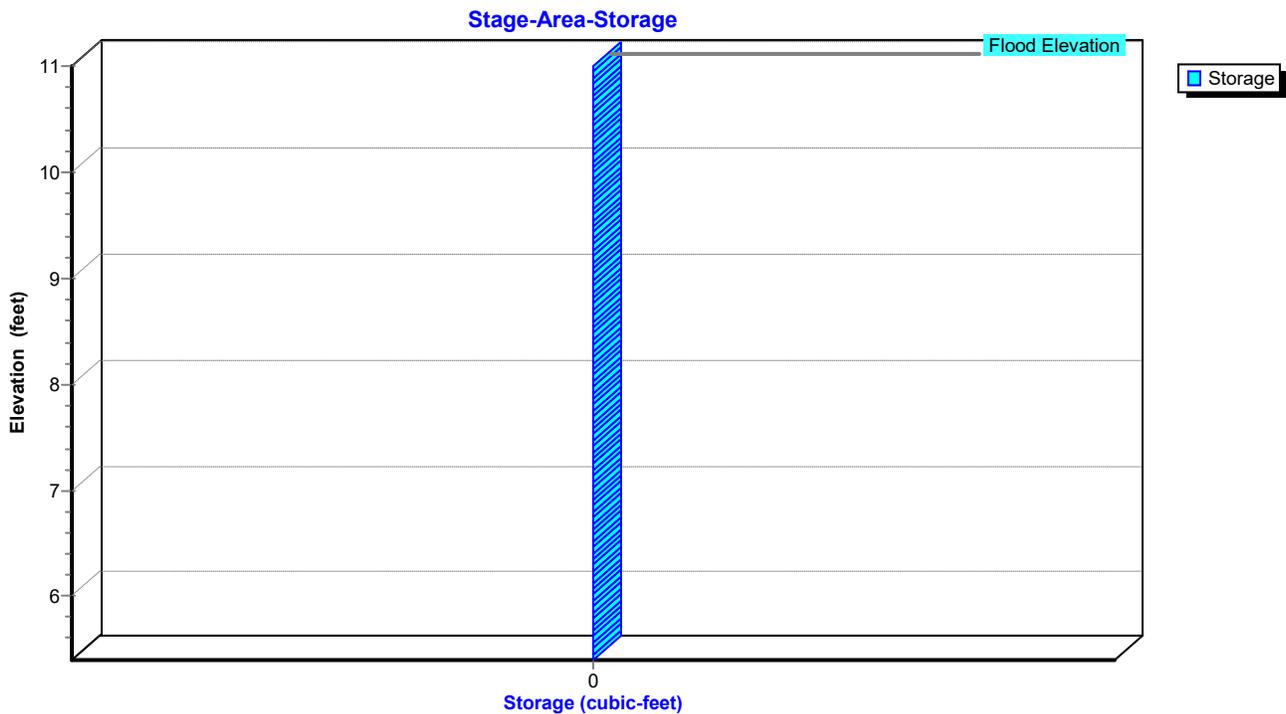
Hydrograph



Pond LS-1: Level Spreader 1 NPDES Outfall #2



Pond LS-1: Level Spreader 1 NPDES Outfall #2



Hydrograph for Pond LS-1: Level Spreader 1 NPDES Outfall #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	5.40	0.00	103.00	0.00	5.40	0.00
3.00	0.00	5.40	0.00	105.00	0.00	5.40	0.00
5.00	0.00	5.40	0.00	107.00	0.00	5.40	0.00
7.00	0.00	5.40	0.00	109.00	0.00	5.40	0.00
9.00	0.13	5.41	0.13	111.00	0.00	5.40	0.00
11.00	0.69	5.43	0.69	113.00	0.00	5.40	0.00
13.00	9.03	5.56	9.03	115.00	0.00	5.40	0.00
15.00	4.29	5.49	4.29	117.00	0.00	5.40	0.00
17.00	1.95	5.46	1.95	119.00	0.00	5.40	0.00
19.00	1.15	5.44	1.15				
21.00	0.86	5.43	0.86				
23.00	0.73	5.43	0.73				
25.00	0.43	5.42	0.43				
27.00	0.08	5.41	0.08				
29.00	0.01	5.40	0.01				
31.00	0.00	5.40	0.00				
33.00	0.00	5.40	0.00				
35.00	0.00	5.40	0.00				
37.00	0.00	5.40	0.00				
39.00	0.00	5.40	0.00				
41.00	0.00	5.40	0.00				
43.00	0.00	5.40	0.00				
45.00	0.00	5.40	0.00				
47.00	0.00	5.40	0.00				
49.00	0.00	5.40	0.00				
51.00	0.00	5.40	0.00				
53.00	0.00	5.40	0.00				
55.00	0.00	5.40	0.00				
57.00	0.00	5.40	0.00				
59.00	0.00	5.40	0.00				
61.00	0.00	5.40	0.00				
63.00	0.00	5.40	0.00				
65.00	0.00	5.40	0.00				
67.00	0.00	5.40	0.00				
69.00	0.00	5.40	0.00				
71.00	0.00	5.40	0.00				
73.00	0.00	5.40	0.00				
75.00	0.00	5.40	0.00				
77.00	0.00	5.40	0.00				
79.00	0.00	5.40	0.00				
81.00	0.00	5.40	0.00				
83.00	0.00	5.40	0.00				
85.00	0.00	5.40	0.00				
87.00	0.00	5.40	0.00				
89.00	0.00	5.40	0.00				
91.00	0.00	5.40	0.00				
93.00	0.00	5.40	0.00				
95.00	0.00	5.40	0.00				
97.00	0.00	5.40	0.00				
99.00	0.00	5.40	0.00				
101.00	0.00	5.40	0.00				

Stage-Discharge for Pond LS-1: Level Spreader 1 NPDES Outfall #2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
5.40	0.00	7.44	424.86	9.48	1,190.70
5.44	1.18	7.48	437.34	9.52	1,208.04
5.48	3.33	7.52	449.94	9.56	1,225.45
5.52	6.11	7.56	462.65	9.60	1,242.94
5.56	9.41	7.60	475.47	9.64	1,260.51
5.60	13.15	7.64	488.41	9.68	1,278.16
5.64	17.28	7.68	501.46	9.72	1,295.88
5.68	21.77	7.72	514.63	9.76	1,313.69
5.72	26.60	7.76	527.90	9.80	1,331.56
5.76	31.73	7.80	541.28	9.84	1,349.52
5.80	37.16	7.84	554.77	9.88	1,367.55
5.84	42.86	7.88	568.36	9.92	1,385.65
5.88	48.83	7.92	582.06	9.96	1,403.83
5.92	55.05	7.96	595.87	10.00	1,422.09
5.96	61.51	8.00	609.78	10.04	1,440.41
6.00	68.21	8.04	623.79	10.08	1,458.82
6.04	75.13	8.08	637.91	10.12	1,477.29
6.08	82.26	8.12	652.13	10.16	1,495.84
6.12	89.61	8.16	666.44	10.20	1,514.46
6.16	97.17	8.20	680.86	10.24	1,533.15
6.20	104.92	8.24	695.38	10.28	1,551.91
6.24	112.86	8.28	709.99	10.32	1,570.75
6.28	121.00	8.32	724.71	10.36	1,589.65
6.32	129.32	8.36	739.51	10.40	1,608.63
6.36	137.82	8.40	754.42	10.44	1,627.67
6.40	146.50	8.44	769.42	10.48	1,646.79
6.44	155.35	8.48	784.51	10.52	1,665.97
6.48	164.36	8.52	799.70	10.56	1,685.23
6.52	173.55	8.56	814.98	10.60	1,704.55
6.56	182.90	8.60	830.36	10.64	1,723.94
6.60	192.40	8.64	845.82	10.68	1,743.40
6.64	202.07	8.68	861.38	10.72	1,762.93
6.68	211.88	8.72	877.02	10.76	1,782.53
6.72	221.85	8.76	892.76	10.80	1,802.19
6.76	231.97	8.80	908.59	10.84	1,821.92
6.80	242.24	8.84	924.50	10.88	1,841.72
6.84	252.65	8.88	940.50	10.92	1,861.58
6.88	263.20	8.92	956.59	10.96	1,881.51
6.92	273.89	8.96	972.77	11.00	1,901.50
6.96	284.72	9.00	989.03		
7.00	295.69	9.04	1,005.38		
7.04	306.80	9.08	1,021.81		
7.08	318.03	9.12	1,038.33		
7.12	329.40	9.16	1,054.93		
7.16	340.89	9.20	1,071.61		
7.20	352.52	9.24	1,088.38		
7.24	364.27	9.28	1,105.23		
7.28	376.14	9.32	1,122.16		
7.32	388.14	9.36	1,139.18		
7.36	400.26	9.40	1,156.27		
7.40	412.50	9.44	1,173.45		

Stage-Area-Storage for Pond LS-1: Level Spreader 1 NPDES Outfall #2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
5.40	0	7.44	0	9.48	0
5.44	0	7.48	0	9.52	0
5.48	0	7.52	0	9.56	0
5.52	0	7.56	0	9.60	0
5.56	0	7.60	0	9.64	0
5.60	0	7.64	0	9.68	0
5.64	0	7.68	0	9.72	0
5.68	0	7.72	0	9.76	0
5.72	0	7.76	0	9.80	0
5.76	0	7.80	0	9.84	0
5.80	0	7.84	0	9.88	0
5.84	0	7.88	0	9.92	0
5.88	0	7.92	0	9.96	0
5.92	0	7.96	0	10.00	0
5.96	0	8.00	0	10.04	0
6.00	0	8.04	0	10.08	0
6.04	0	8.08	0	10.12	0
6.08	0	8.12	0	10.16	0
6.12	0	8.16	0	10.20	0
6.16	0	8.20	0	10.24	0
6.20	0	8.24	0	10.28	0
6.24	0	8.28	0	10.32	0
6.28	0	8.32	0	10.36	0
6.32	0	8.36	0	10.40	0
6.36	0	8.40	0	10.44	0
6.40	0	8.44	0	10.48	0
6.44	0	8.48	0	10.52	0
6.48	0	8.52	0	10.56	0
6.52	0	8.56	0	10.60	0
6.56	0	8.60	0	10.64	0
6.60	0	8.64	0	10.68	0
6.64	0	8.68	0	10.72	0
6.68	0	8.72	0	10.76	0
6.72	0	8.76	0	10.80	0
6.76	0	8.80	0	10.84	0
6.80	0	8.84	0	10.88	0
6.84	0	8.88	0	10.92	0
6.88	0	8.92	0	10.96	0
6.92	0	8.96	0	11.00	0
6.96	0	9.00	0		
7.00	0	9.04	0		
7.04	0	9.08	0		
7.08	0	9.12	0		
7.12	0	9.16	0		
7.16	0	9.20	0		
7.20	0	9.24	0		
7.24	0	9.28	0		
7.28	0	9.32	0		
7.32	0	9.36	0		
7.36	0	9.40	0		
7.40	0	9.44	0		

Summary for Pond P-1: Compost Building

Inflow Area = 2.179 ac, 62.17% Impervious, Inflow Depth = 7.25" for Fv-100YR event
 Inflow = 15.39 cfs @ 12.13 hrs, Volume= 1.317 af
 Outflow = 13.11 cfs @ 12.17 hrs, Volume= 1.317 af, Atten= 15%, Lag= 2.7 min
 Primary = 13.11 cfs @ 12.17 hrs, Volume= 1.317 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 9.01' @ 12.17 hrs Surf.Area= 5,602 sf Storage= 2,697 cf

Plug-Flow detention time= 2.0 min calculated for 1.317 af (100% of inflow)
 Center-of-Mass det. time= 2.0 min (797.3 - 795.3)

Volume	Invert	Avail.Storage	Storage Description
#1	8.00'	12,294 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.00	10	0	0
9.00	5,235	2,623	2,623
9.50	18,583	5,955	8,577
9.70	18,583	3,717	12,294

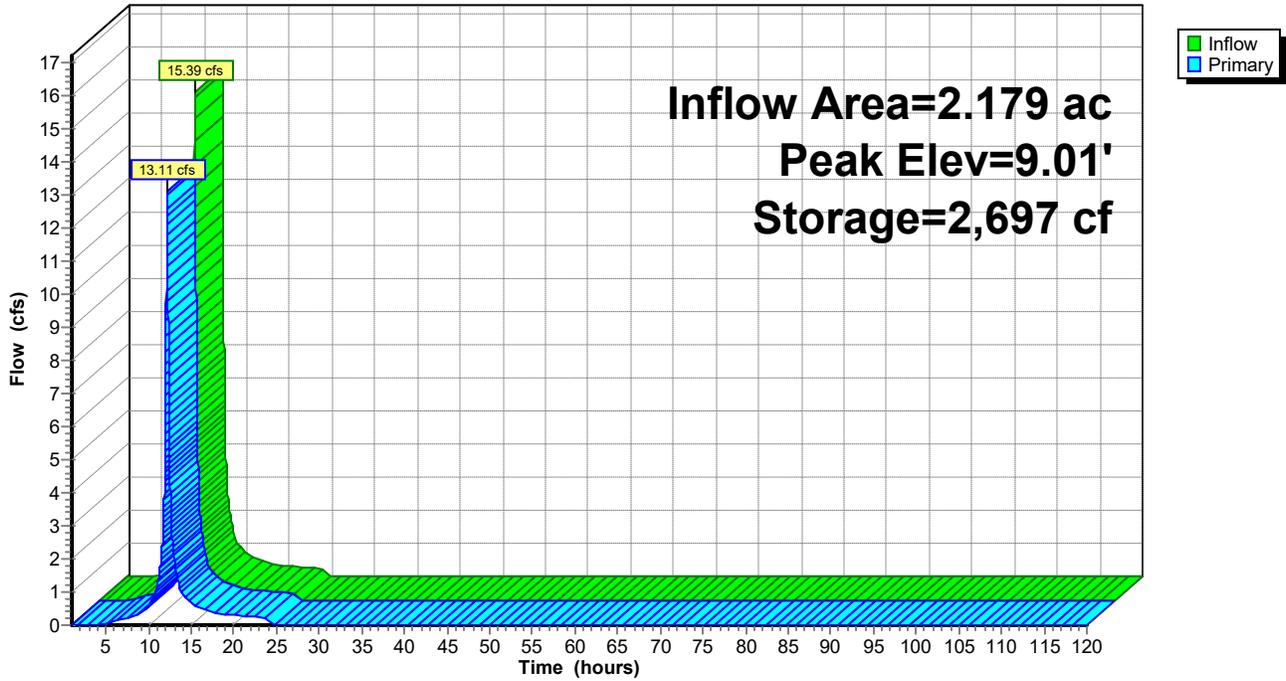
Device	Routing	Invert	Outlet Devices
#1	Primary	8.00'	48.0" W x 24.0" H Box Culvert L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.00' / 7.50' S= 0.0109 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 8.00 sf
#2	Primary	9.50'	200.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.10 cfs @ 12.17 hrs HW=9.01' TW=6.30' (Dynamic Tailwater)

- 1=Culvert (Inlet Controls 13.10 cfs @ 3.23 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

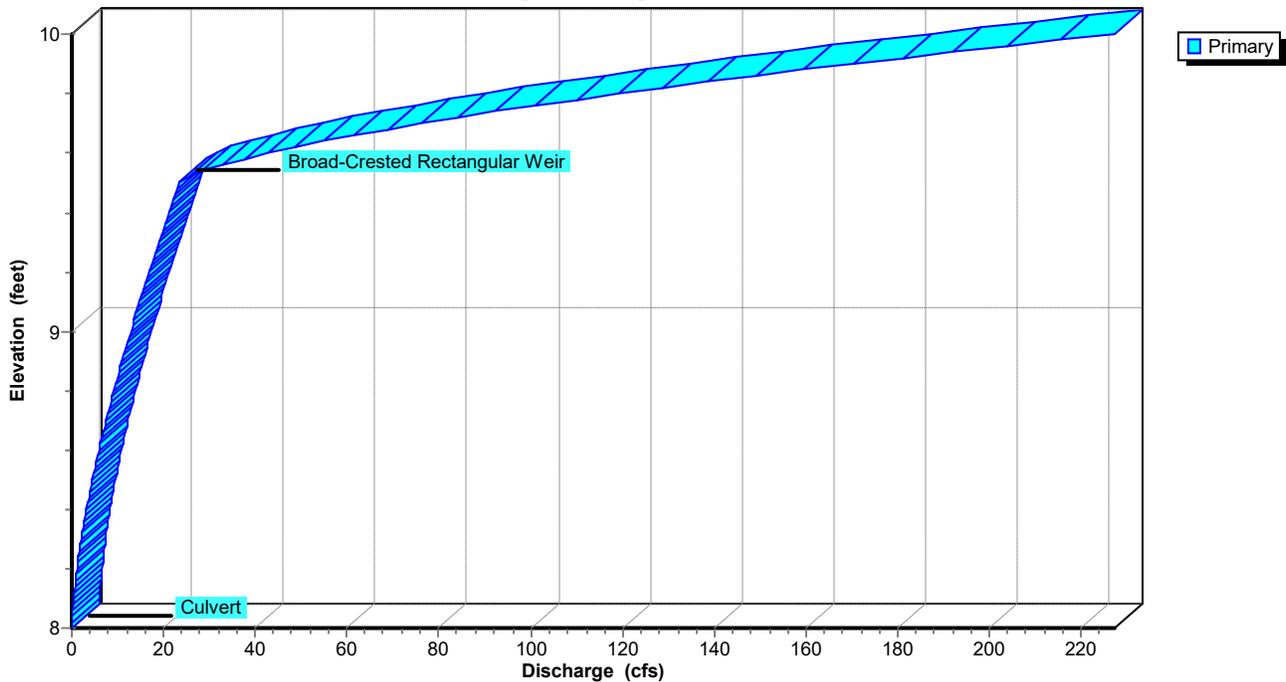
Pond P-1: Compost Building

Hydrograph

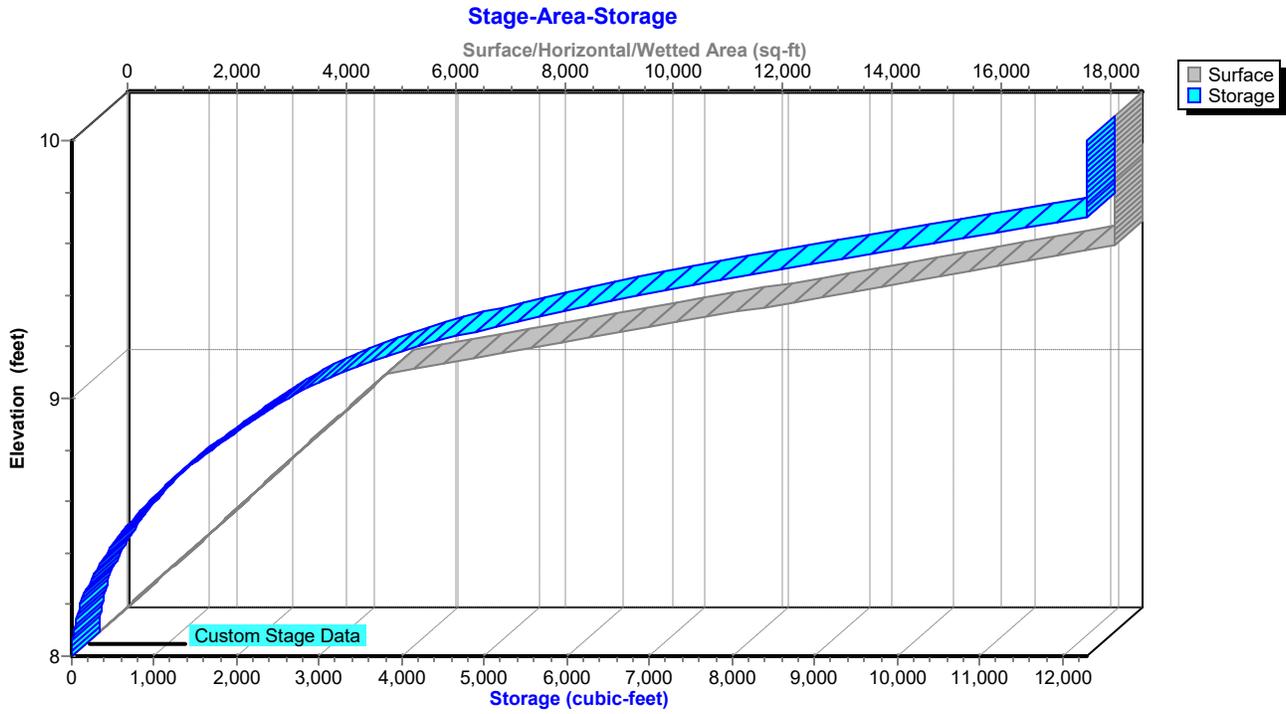


Pond P-1: Compost Building

Stage-Discharge



Pond P-1: Compost Building



Hydrograph for Pond P-1: Compost Building

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	8.00	0.00	103.00	0.00	0	8.00	0.00
3.00	0.00	0	8.00	0.00	105.00	0.00	0	8.00	0.00
5.00	0.07	3	8.03	0.07	107.00	0.00	0	8.00	0.00
7.00	0.18	9	8.06	0.18	109.00	0.00	0	8.00	0.00
9.00	0.36	23	8.09	0.36	111.00	0.00	0	8.00	0.00
11.00	1.21	110	8.20	1.18	113.00	0.00	0	8.00	0.00
13.00	1.93	223	8.29	2.01	115.00	0.00	0	8.00	0.00
15.00	0.65	51	8.14	0.66	117.00	0.00	0	8.00	0.00
17.00	0.44	30	8.11	0.44	119.00	0.00	0	8.00	0.00
19.00	0.32	20	8.09	0.32					
21.00	0.28	17	8.08	0.28					
23.00	0.24	13	8.07	0.24					
25.00	0.00	0	8.00	0.00					
27.00	0.00	0	8.00	0.00					
29.00	0.00	0	8.00	0.00					
31.00	0.00	0	8.00	0.00					
33.00	0.00	0	8.00	0.00					
35.00	0.00	0	8.00	0.00					
37.00	0.00	0	8.00	0.00					
39.00	0.00	0	8.00	0.00					
41.00	0.00	0	8.00	0.00					
43.00	0.00	0	8.00	0.00					
45.00	0.00	0	8.00	0.00					
47.00	0.00	0	8.00	0.00					
49.00	0.00	0	8.00	0.00					
51.00	0.00	0	8.00	0.00					
53.00	0.00	0	8.00	0.00					
55.00	0.00	0	8.00	0.00					
57.00	0.00	0	8.00	0.00					
59.00	0.00	0	8.00	0.00					
61.00	0.00	0	8.00	0.00					
63.00	0.00	0	8.00	0.00					
65.00	0.00	0	8.00	0.00					
67.00	0.00	0	8.00	0.00					
69.00	0.00	0	8.00	0.00					
71.00	0.00	0	8.00	0.00					
73.00	0.00	0	8.00	0.00					
75.00	0.00	0	8.00	0.00					
77.00	0.00	0	8.00	0.00					
79.00	0.00	0	8.00	0.00					
81.00	0.00	0	8.00	0.00					
83.00	0.00	0	8.00	0.00					
85.00	0.00	0	8.00	0.00					
87.00	0.00	0	8.00	0.00					
89.00	0.00	0	8.00	0.00					
91.00	0.00	0	8.00	0.00					
93.00	0.00	0	8.00	0.00					
95.00	0.00	0	8.00	0.00					
97.00	0.00	0	8.00	0.00					
99.00	0.00	0	8.00	0.00					
101.00	0.00	0	8.00	0.00					

Stage-Discharge for Pond P-1: Compost Building

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
8.00	0.00	8.51	4.68	9.02	13.23	9.53	27.08
8.01	0.01	8.52	4.81	9.03	13.42	9.54	28.83
8.02	0.04	8.53	4.95	9.04	13.62	9.55	30.77
8.03	0.07	8.54	5.10	9.05	13.81	9.56	32.90
8.04	0.10	8.55	5.24	9.06	14.01	9.57	35.19
8.05	0.14	8.56	5.38	9.07	14.21	9.58	37.63
8.06	0.19	8.57	5.53	9.08	14.41	9.59	40.21
8.07	0.24	8.58	5.67	9.09	14.61	9.60	42.94
8.08	0.29	8.59	5.82	9.10	14.81	9.61	45.79
8.09	0.35	8.60	5.97	9.11	15.02	9.62	48.76
8.10	0.41	8.61	6.12	9.12	15.22	9.63	51.84
8.11	0.47	8.62	6.27	9.13	15.42	9.64	55.04
8.12	0.53	8.63	6.42	9.14	15.63	9.65	58.35
8.13	0.60	8.64	6.57	9.15	15.83	9.66	61.77
8.14	0.67	8.65	6.73	9.16	16.04	9.67	65.28
8.15	0.75	8.66	6.88	9.17	16.25	9.68	68.89
8.16	0.82	8.67	7.04	9.18	16.46	9.69	72.60
8.17	0.90	8.68	7.20	9.19	16.67	9.70	76.40
8.18	0.98	8.69	7.36	9.20	16.88	9.71	80.31
8.19	1.06	8.70	7.52	9.21	17.09	9.72	84.31
8.20	1.15	8.71	7.68	9.22	17.30	9.73	88.41
8.21	1.24	8.72	7.84	9.23	17.52	9.74	92.58
8.22	1.32	8.73	8.01	9.24	17.73	9.75	96.85
8.23	1.42	8.74	8.17	9.25	17.94	9.76	101.20
8.24	1.51	8.75	8.34	9.26	18.16	9.77	105.63
8.25	1.60	8.76	8.51	9.27	18.38	9.78	110.14
8.26	1.70	8.77	8.68	9.28	18.59	9.79	114.74
8.27	1.80	8.78	8.85	9.29	18.81	9.80	119.41
8.28	1.90	8.79	9.02	9.30	19.03	9.81	124.16
8.29	2.01	8.80	9.19	9.31	19.25	9.82	128.99
8.30	2.11	8.81	9.36	9.32	19.47	9.83	133.89
8.31	2.22	8.82	9.53	9.33	19.69	9.84	138.87
8.32	2.32	8.83	9.71	9.34	19.92	9.85	143.92
8.33	2.43	8.84	9.89	9.35	20.14	9.86	149.04
8.34	2.55	8.85	10.06	9.36	20.36	9.87	154.23
8.35	2.66	8.86	10.24	9.37	20.59	9.88	159.50
8.36	2.77	8.87	10.42	9.38	20.82	9.89	164.83
8.37	2.89	8.88	10.60	9.39	21.04	9.90	170.24
8.38	3.01	8.89	10.78	9.40	21.27	9.91	175.66
8.39	3.13	8.90	10.96	9.41	21.50	9.92	181.14
8.40	3.25	8.91	11.15	9.42	21.73	9.93	186.69
8.41	3.37	8.92	11.33	9.43	21.96	9.94	192.30
8.42	3.49	8.93	11.52	9.44	22.19	9.95	197.97
8.43	3.62	8.94	11.70	9.45	22.42	9.96	203.71
8.44	3.75	8.95	11.89	9.46	22.65	9.97	209.50
8.45	3.88	8.96	12.08	9.47	22.88	9.98	215.35
8.46	4.01	8.97	12.27	9.48	23.12	9.99	221.26
8.47	4.14	8.98	12.46	9.49	23.35	10.00	227.24
8.48	4.27	8.99	12.65	9.50	23.59		
8.49	4.40	9.00	12.84	9.51	24.36		
8.50	4.54	9.01	13.03	9.52	25.58		

Stage-Area-Storage for Pond P-1: Compost Building

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
8.00	10	0	9.02	5,769	2,733
8.02	114	1	9.04	6,303	2,853
8.04	219	5	9.06	6,837	2,985
8.06	324	10	9.08	7,371	3,127
8.08	428	18	9.10	7,905	3,279
8.10	532	27	9.12	8,439	3,443
8.12	637	39	9.14	8,972	3,617
8.14	742	53	9.16	9,506	3,802
8.16	846	68	9.18	10,040	3,997
8.18	950	86	9.20	10,574	4,203
8.20	1,055	106	9.22	11,108	4,420
8.22	1,160	129	9.24	11,642	4,648
8.24	1,264	153	9.26	12,176	4,886
8.26	1,368	179	9.28	12,710	5,135
8.28	1,473	208	9.30	13,244	5,394
8.30	1,578	238	9.32	13,778	5,665
8.32	1,682	271	9.34	14,312	5,945
8.34	1,786	305	9.36	14,846	6,237
8.36	1,891	342	9.38	15,379	6,539
8.38	1,996	381	9.40	15,913	6,852
8.40	2,100	422	9.42	16,447	7,176
8.42	2,204	465	9.44	16,981	7,510
8.44	2,309	510	9.46	17,515	7,855
8.46	2,414	557	9.48	18,049	8,211
8.48	2,518	607	9.50	18,583	8,577
8.50	2,623	658	9.52	18,583	8,949
8.52	2,727	712	9.54	18,583	9,320
8.54	2,831	767	9.56	18,583	9,692
8.56	2,936	825	9.58	18,583	10,064
8.58	3,041	885	9.60	18,583	10,435
8.60	3,145	946	9.62	18,583	10,807
8.62	3,249	1,010	9.64	18,583	11,179
8.64	3,354	1,076	9.66	18,583	11,550
8.66	3,459	1,145	9.68	18,583	11,922
8.68	3,563	1,215	9.70	18,583	12,294
8.70	3,667	1,287	9.72	18,583	12,294
8.72	3,772	1,362	9.74	18,583	12,294
8.74	3,877	1,438	9.76	18,583	12,294
8.76	3,981	1,517	9.78	18,583	12,294
8.78	4,085	1,597	9.80	18,583	12,294
8.80	4,190	1,680	9.82	18,583	12,294
8.82	4,295	1,765	9.84	18,583	12,294
8.84	4,399	1,852	9.86	18,583	12,294
8.86	4,503	1,941	9.88	18,583	12,294
8.88	4,608	2,032	9.90	18,583	12,294
8.90	4,713	2,125	9.92	18,583	12,294
8.92	4,817	2,220	9.94	18,583	12,294
8.94	4,921	2,318	9.96	18,583	12,294
8.96	5,026	2,417	9.98	18,583	12,294
8.98	5,131	2,519	10.00	18,583	12,294
9.00	5,235	2,623			

Summary for Pond SGWs: SGW-Combo

Inflow Area = 10.978 ac, 56.54% Impervious, Inflow Depth = 7.00" for Fv-100YR event
 Inflow = 65.72 cfs @ 12.16 hrs, Volume= 6.406 af
 Outflow = 62.69 cfs @ 12.19 hrs, Volume= 6.406 af, Atten= 5%, Lag= 2.1 min
 Primary = 62.69 cfs @ 12.19 hrs, Volume= 6.406 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 5.94' @ 12.19 hrs Surf.Area= 24,248 sf Storage= 27,217 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 46.2 min (880.0 - 833.8)

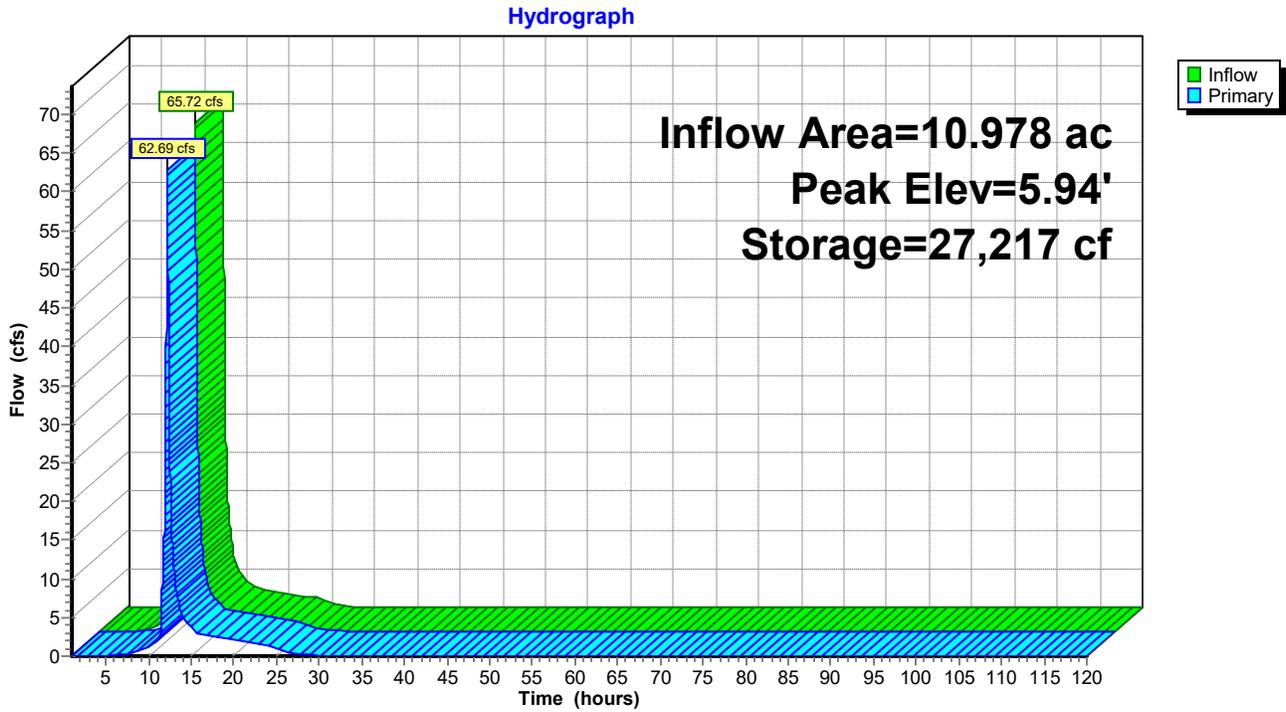
Volume	Invert	Avail.Storage	Storage Description
#1	4.50'	41,820 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.50	10,502	0	0
5.00	18,280	7,196	7,196
5.50	21,308	9,897	17,093
6.00	24,615	11,481	28,573
6.50	28,370	13,246	41,820

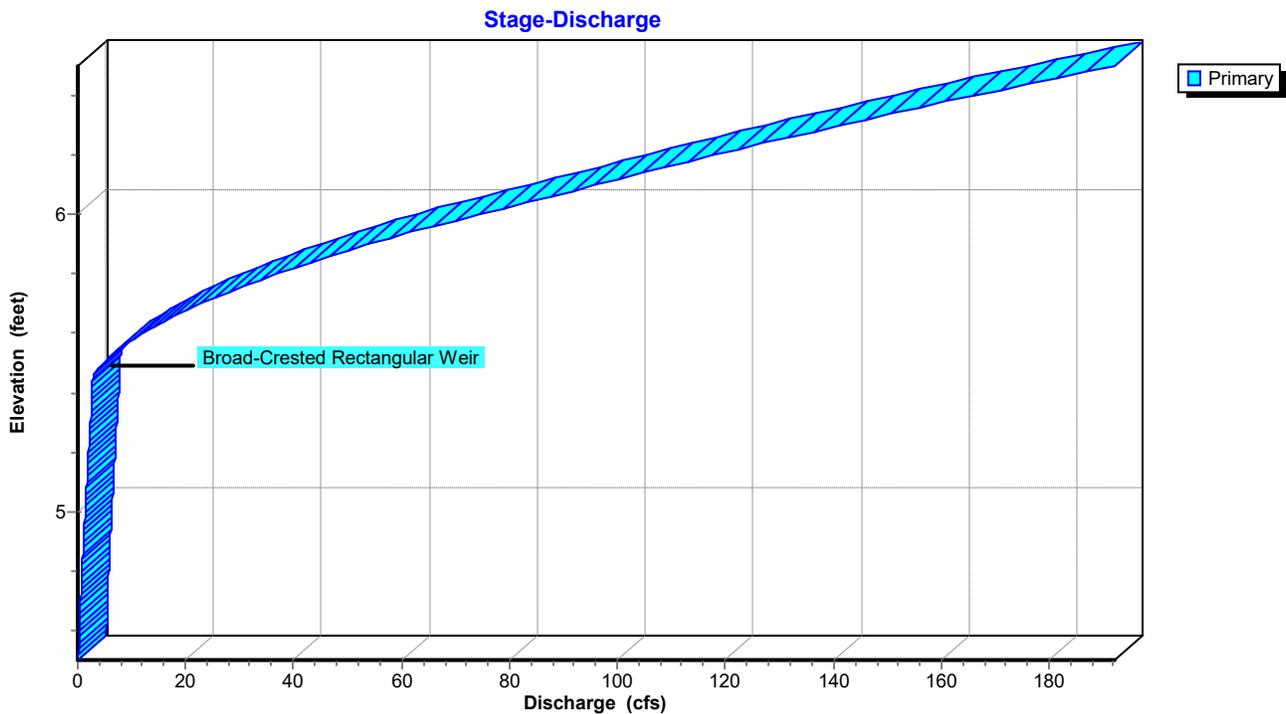
Device	Routing	Invert	Outlet Devices
#1	Primary	4.30'	12.0" Round Culvert L= 19.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.30' / 4.13' S= 0.0089 ' / ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	5.45'	65.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=62.65 cfs @ 12.19 hrs HW=5.94' (Free Discharge)
 1=Culvert (Barrel Controls 3.93 cfs @ 5.00 fps)
 2=Broad-Crested Rectangular Weir (Weir Controls 58.72 cfs @ 1.83 fps)

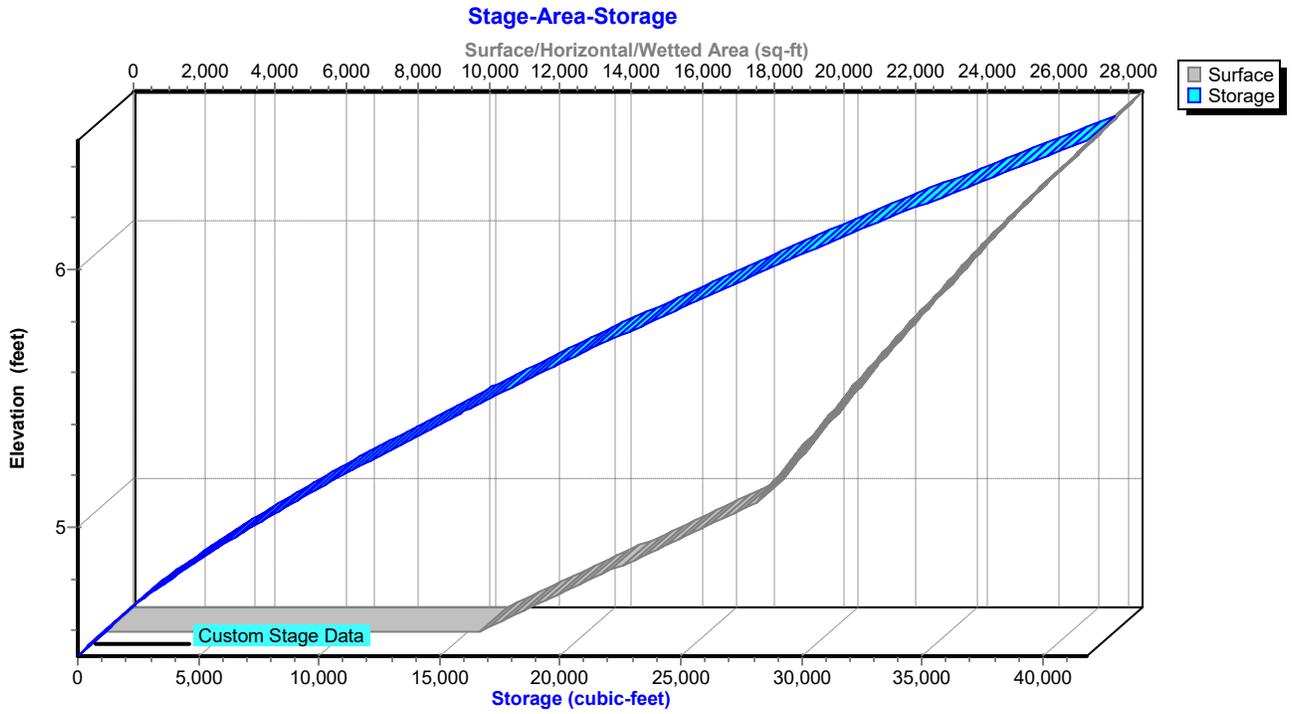
Pond SGWs: SGW-Combo



Pond SGWs: SGW-Combo



Pond SGWs: SGW-Combo



Hydrograph for Pond SGWs: SGW-Combo

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.50	0.00	103.00	0.00	0	4.50	0.00
3.00	0.00	0	4.50	0.00	105.00	0.00	0	4.50	0.00
5.00	0.02	0	4.50	0.02	107.00	0.00	0	4.50	0.00
7.00	0.46	493	4.55	0.21	109.00	0.00	0	4.50	0.00
9.00	1.36	3,720	4.79	0.75	111.00	0.00	0	4.50	0.00
11.00	4.36	11,283	5.22	2.07	113.00	0.00	0	4.50	0.00
13.00	10.35	19,031	5.59	11.13	115.00	0.00	0	4.50	0.00
15.00	3.46	16,659	5.48	3.65	117.00	0.00	0	4.50	0.00
17.00	2.38	15,308	5.42	2.69	119.00	0.00	0	4.50	0.00
19.00	1.83	12,363	5.27	2.25					
21.00	1.54	9,865	5.14	1.83					
23.00	1.30	8,062	5.05	1.52					
25.00	0.39	5,385	4.90	1.05					
27.00	0.11	1,895	4.66	0.44					
29.00	0.04	313	4.53	0.19					
31.00	0.02	0	4.50	0.04					
33.00	0.01	0	4.50	0.02					
35.00	0.01	0	4.50	0.02					
37.00	0.01	0	4.50	0.01					
39.00	0.00	0	4.50	0.01					
41.00	0.00	0	4.50	0.01					
43.00	0.00	0	4.50	0.00					
45.00	0.00	0	4.50	0.00					
47.00	0.00	0	4.50	0.00					
49.00	0.00	0	4.50	0.00					
51.00	0.00	0	4.50	0.00					
53.00	0.00	0	4.50	0.00					
55.00	0.00	0	4.50	0.00					
57.00	0.00	0	4.50	0.00					
59.00	0.00	0	4.50	0.00					
61.00	0.00	0	4.50	0.00					
63.00	0.00	0	4.50	0.00					
65.00	0.00	0	4.50	0.00					
67.00	0.00	0	4.50	0.00					
69.00	0.00	0	4.50	0.00					
71.00	0.00	0	4.50	0.00					
73.00	0.00	0	4.50	0.00					
75.00	0.00	0	4.50	0.00					
77.00	0.00	0	4.50	0.00					
79.00	0.00	0	4.50	0.00					
81.00	0.00	0	4.50	0.00					
83.00	0.00	0	4.50	0.00					
85.00	0.00	0	4.50	0.00					
87.00	0.00	0	4.50	0.00					
89.00	0.00	0	4.50	0.00					
91.00	0.00	0	4.50	0.00					
93.00	0.00	0	4.50	0.00					
95.00	0.00	0	4.50	0.00					
97.00	0.00	0	4.50	0.00					
99.00	0.00	0	4.50	0.00					
101.00	0.00	0	4.50	0.00					

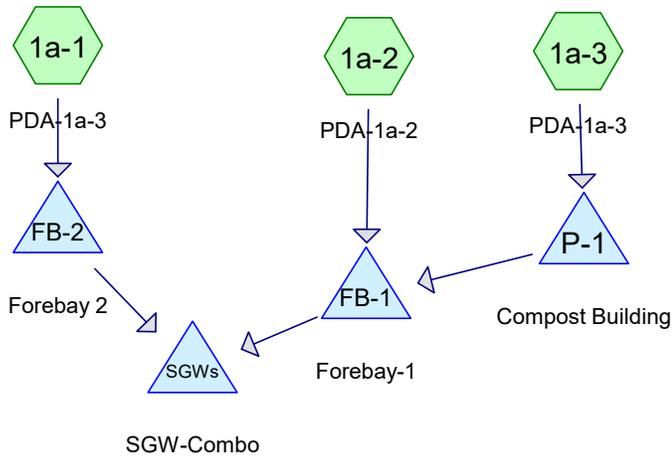
Stage-Discharge for Pond SGWs: SGW-Combo

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
4.50	0.00	5.01	1.40	5.52	5.82	6.03	81.10
4.51	0.16	5.02	1.43	5.53	6.47	6.04	83.41
4.52	0.17	5.03	1.46	5.54	7.16	6.05	85.74
4.53	0.19	5.04	1.50	5.55	7.89	6.06	87.78
4.54	0.20	5.05	1.53	5.56	8.66	6.07	89.83
4.55	0.22	5.06	1.56	5.57	9.46	6.08	91.90
4.56	0.24	5.07	1.59	5.58	10.29	6.09	93.99
4.57	0.25	5.08	1.63	5.59	11.16	6.10	96.09
4.58	0.27	5.09	1.66	5.60	12.05	6.11	98.20
4.59	0.29	5.10	1.69	5.61	12.96	6.12	100.33
4.60	0.31	5.11	1.72	5.62	13.91	6.13	102.47
4.61	0.33	5.12	1.76	5.63	14.87	6.14	104.63
4.62	0.35	5.13	1.79	5.64	15.87	6.15	106.80
4.63	0.37	5.14	1.82	5.65	16.92	6.16	108.98
4.64	0.39	5.15	1.85	5.66	18.04	6.17	111.17
4.65	0.41	5.16	1.89	5.67	19.19	6.18	113.38
4.66	0.43	5.17	1.92	5.68	20.37	6.19	115.60
4.67	0.46	5.18	1.95	5.69	21.58	6.20	117.83
4.68	0.48	5.19	1.99	5.70	22.83	6.21	120.08
4.69	0.50	5.20	2.02	5.71	24.10	6.22	122.34
4.70	0.52	5.21	2.05	5.72	25.40	6.23	124.61
4.71	0.55	5.22	2.09	5.73	26.74	6.24	126.90
4.72	0.57	5.23	2.12	5.74	28.10	6.25	129.20
4.73	0.60	5.24	2.15	5.75	29.49	6.26	131.56
4.74	0.62	5.25	2.18	5.76	30.91	6.27	133.94
4.75	0.65	5.26	2.22	5.77	32.36	6.28	136.32
4.76	0.67	5.27	2.25	5.78	33.83	6.29	138.73
4.77	0.70	5.28	2.28	5.79	35.34	6.30	141.15
4.78	0.72	5.29	2.31	5.80	36.87	6.31	143.58
4.79	0.75	5.30	2.34	5.81	38.44	6.32	146.02
4.80	0.78	5.31	2.38	5.82	40.03	6.33	148.48
4.81	0.80	5.32	2.41	5.83	41.65	6.34	150.96
4.82	0.83	5.33	2.44	5.84	43.29	6.35	153.44
4.83	0.86	5.34	2.47	5.85	44.97	6.36	155.94
4.84	0.89	5.35	2.50	5.86	46.71	6.37	158.46
4.85	0.91	5.36	2.53	5.87	48.49	6.38	160.99
4.86	0.94	5.37	2.56	5.88	50.30	6.39	163.53
4.87	0.97	5.38	2.59	5.89	52.13	6.40	166.08
4.88	1.00	5.39	2.62	5.90	54.00	6.41	168.65
4.89	1.03	5.40	2.65	5.91	55.90	6.42	171.23
4.90	1.06	5.41	2.68	5.92	57.83	6.43	173.83
4.91	1.09	5.42	2.71	5.93	59.79	6.44	176.44
4.92	1.12	5.43	2.74	5.94	61.78	6.45	179.06
4.93	1.15	5.44	2.76	5.95	63.81	6.46	181.66
4.94	1.18	5.45	2.79	5.96	65.86	6.47	184.27
4.95	1.21	5.46	2.97	5.97	67.95	6.48	186.90
4.96	1.24	5.47	3.28	5.98	70.06	6.49	189.53
4.97	1.27	5.48	3.67	5.99	72.21	6.50	192.18
4.98	1.30	5.49	4.13	6.00	74.39		
4.99	1.34	5.50	4.64	6.01	76.59		
5.00	1.37	5.51	5.20	6.02	78.83		

Stage-Area-Storage for Pond SGWs: SGW-Combo

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.50	10,502	0	5.52	21,440	17,520
4.52	10,813	213	5.54	21,573	17,950
4.54	11,124	433	5.56	21,705	18,383
4.56	11,435	658	5.58	21,837	18,818
4.58	11,746	890	5.60	21,969	19,256
4.60	12,058	1,128	5.62	22,102	19,697
4.62	12,369	1,372	5.64	22,234	20,140
4.64	12,680	1,623	5.66	22,366	20,586
4.66	12,991	1,879	5.68	22,499	21,035
4.68	13,302	2,142	5.70	22,631	21,486
4.70	13,613	2,412	5.72	22,763	21,940
4.72	13,924	2,687	5.74	22,895	22,397
4.74	14,235	2,968	5.76	23,028	22,856
4.76	14,547	3,256	5.78	23,160	23,318
4.78	14,858	3,550	5.80	23,292	23,783
4.80	15,169	3,851	5.82	23,424	24,250
4.82	15,480	4,157	5.84	23,557	24,720
4.84	15,791	4,470	5.86	23,689	25,192
4.86	16,102	4,789	5.88	23,821	25,667
4.88	16,413	5,114	5.90	23,954	26,145
4.90	16,724	5,445	5.92	24,086	26,625
4.92	17,036	5,783	5.94	24,218	27,108
4.94	17,347	6,127	5.96	24,350	27,594
4.96	17,658	6,477	5.98	24,483	28,082
4.98	17,969	6,833	6.00	24,615	28,573
5.00	18,280	7,196	6.02	24,765	29,067
5.02	18,401	7,562	6.04	24,915	29,564
5.04	18,522	7,932	6.06	25,066	30,064
5.06	18,643	8,303	6.08	25,216	30,566
5.08	18,764	8,677	6.10	25,366	31,072
5.10	18,886	9,054	6.12	25,516	31,581
5.12	19,007	9,433	6.14	25,666	32,093
5.14	19,128	9,814	6.16	25,817	32,608
5.16	19,249	10,198	6.18	25,967	33,126
5.18	19,370	10,584	6.20	26,117	33,646
5.20	19,491	10,973	6.22	26,267	34,170
5.22	19,612	11,364	6.24	26,417	34,697
5.24	19,733	11,757	6.26	26,568	35,227
5.26	19,855	12,153	6.28	26,718	35,760
5.28	19,976	12,551	6.30	26,868	36,296
5.30	20,097	12,952	6.32	27,018	36,835
5.32	20,218	13,355	6.34	27,168	37,376
5.34	20,339	13,761	6.36	27,319	37,921
5.36	20,460	14,169	6.38	27,469	38,469
5.38	20,581	14,579	6.40	27,619	39,020
5.40	20,702	14,992	6.42	27,769	39,574
5.42	20,824	15,407	6.44	27,919	40,131
5.44	20,945	15,825	6.46	28,070	40,691
5.46	21,066	16,245	6.48	28,220	41,254
5.48	21,187	16,668	6.50	28,370	41,820
5.50	21,308	17,093			

**PDA-1a to POA-1a
NPDES Outfall #1**



**DA-1b
Pre-Development**



**PDA-1b
Post-Development**

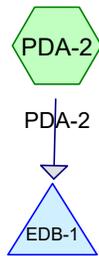


DA-2 Pre-Development



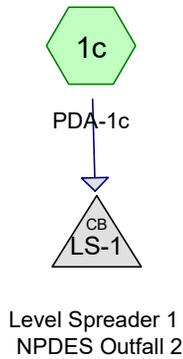
**PDA-2
Post-Development to
POA-2 NPDES Outfall
3**

**DA-2
Post-Development**



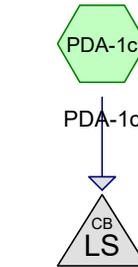
PDA-2 Extended Det.
Basin

**PDA-1c
Post-Development to
POA-1c NPDES
Outfall 2**

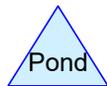
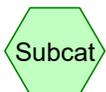


Level Spreader 1
NPDES Outfall 2

**PDA-1c
Post-Development-No
Pad**



Level Spreader 1
NPDES Outfall 2



Blessing-Preliminary_H&H_Analysis-Rpv-NOAA_07-08-2021

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	11.614	0.000	0.000	0.000	11.614	>75% Grass cover, Good	1a-1, 1a-2, 1a-3, DA-2 Pre-, PDA-2
0.000	7.492	0.000	0.000	0.000	7.492	Brush, Good	1c, PDA-1c
0.000	0.000	0.000	0.000	0.083	0.083	Forebay 1 @ 5.5 Wetland D	1a-1
0.000	0.401	0.000	0.000	0.000	0.401	Gravel surface	DA-2 Pre-
0.000	0.000	0.000	0.000	0.012	0.012	Office Roof	1a-1
0.000	1.366	0.000	0.000	0.000	1.366	Paved parking	DA-2 Pre-, PDA-2
0.000	0.000	0.000	0.000	1.184	1.184	Roadway & Parking	1a-1
0.000	5.091	0.000	0.000	0.000	5.091	Roofs	1b, 1c, PDA-1b, PDA-1c, PDA-2
0.000	1.354	0.000	0.000	0.000	1.354	Roofs, Paved parking	1a-3
0.000	0.000	0.000	0.000	0.147	0.147	SGW-2 @ 5.5-wetland-D	1a-1
0.000	0.984	0.000	0.000	0.000	0.984	Woods/grass comb., Good	1b, PDA-1b
0.000	0.000	0.000	0.000	3.656	3.656	combined impervious	1a-2
0.000	0.000	0.000	0.000	0.497	0.497	filtration Pad	1c
0.000	0.000	0.000	0.000	0.037	0.037	leachate pad	1c
0.000	0.000	0.000	0.000	0.037	0.037	leachate tank pad	PDA-1c
0.000	28.303	0.000	0.000	5.654	33.957	TOTAL AREA	

Blessing-Preliminary_H&H_Analysis-Rpv-NOAA_07-08-2021

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	EDB-1	7.10	7.00	57.0	0.0018	0.011	6.0	0.0	0.0
2	FB-1	4.80	4.50	85.0	0.0035	0.013	18.0	0.0	0.0
3	FB-2	4.80	4.50	48.0	0.0062	0.013	12.0	0.0	0.0
4	P-1	8.00	7.50	46.0	0.0109	0.010	48.0	24.0	0.0
5	SGWs	4.30	4.13	19.0	0.0089	0.013	12.0	0.0	0.0

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Notes Listing (all nodes)

Line#	Node Number	Notes
1	DA-2 Pre-	Initial Mannings on trap swale set at 0.15 pending depth assessment
2	PDA-2	Initial Mannings on trap swale set at 0.15 pending depth assessment

Summary for Subcatchment 1a-1: PDA-1a-3

Runoff = 3.05 cfs @ 12.13 hrs, Volume= 0.260 af, Depth= 1.45"

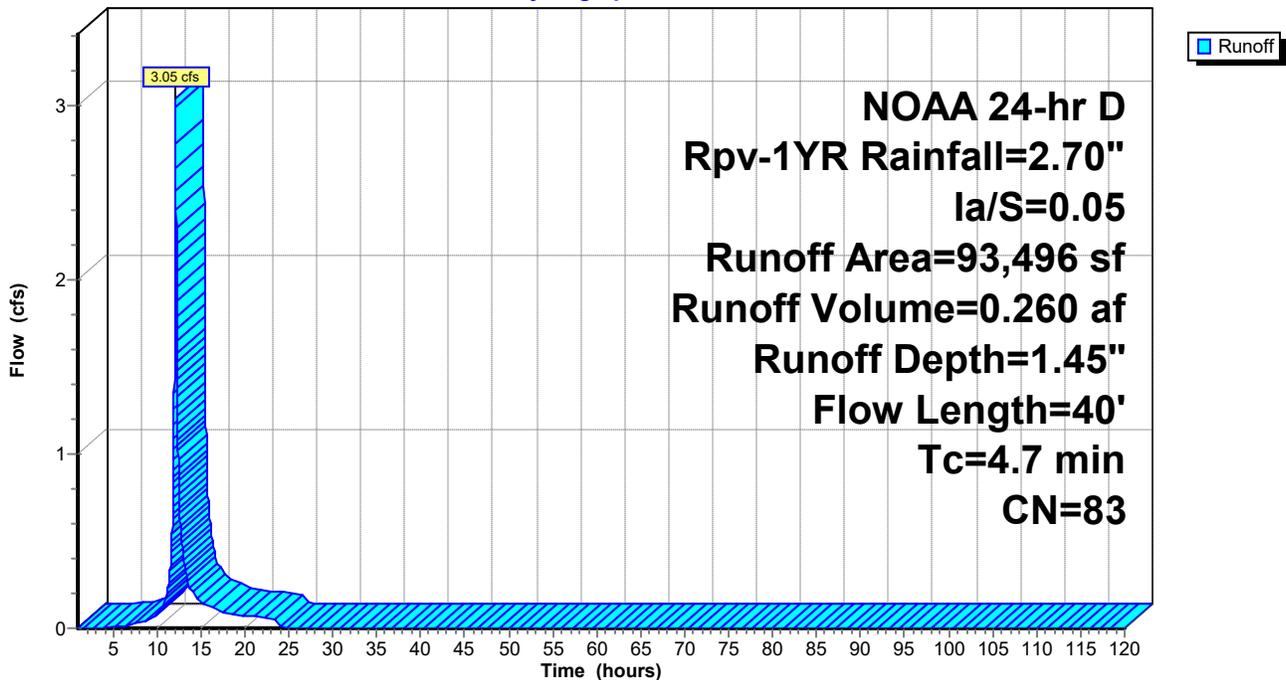
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
* 51,584	98	Roadway & Parking
* 513	98	Office Roof
* 6,404	73	SGW-2 @ 5.5-wetland-D
* 3,625	73	Forebay 1 @ 5.5 Wetland D
31,370	61	>75% Grass cover, Good, HSG B
93,496	83	Weighted Average
41,399		44.28% Pervious Area
52,097		55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	30	0.0270	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
0.0	10	0.2200	7.04		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
4.7	40	Total			

Subcatchment 1a-1: PDA-1a-3

Hydrograph



Hydrograph for Subcatchment 1a-1: PDA-1a-3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	1.45	0.00	103.00	2.70	1.45	0.00
2.00	0.06	0.00	0.00	53.00	2.70	1.45	0.00	104.00	2.70	1.45	0.00
3.00	0.10	0.00	0.00	54.00	2.70	1.45	0.00	105.00	2.70	1.45	0.00
4.00	0.14	0.00	0.00	55.00	2.70	1.45	0.00	106.00	2.70	1.45	0.00
5.00	0.18	0.00	0.01	56.00	2.70	1.45	0.00	107.00	2.70	1.45	0.00
6.00	0.23	0.01	0.01	57.00	2.70	1.45	0.00	108.00	2.70	1.45	0.00
7.00	0.28	0.01	0.02	58.00	2.70	1.45	0.00	109.00	2.70	1.45	0.00
8.00	0.35	0.03	0.03	59.00	2.70	1.45	0.00	110.00	2.70	1.45	0.00
9.00	0.43	0.04	0.04	60.00	2.70	1.45	0.00	111.00	2.70	1.45	0.00
10.00	0.54	0.08	0.08	61.00	2.70	1.45	0.00	112.00	2.70	1.45	0.00
11.00	0.70	0.14	0.18	62.00	2.70	1.45	0.00	113.00	2.70	1.45	0.00
12.00	1.29	0.44	1.57	63.00	2.70	1.45	0.00	114.00	2.70	1.45	0.00
13.00	2.00	0.91	0.43	64.00	2.70	1.45	0.00	115.00	2.70	1.45	0.00
14.00	2.16	1.03	0.22	65.00	2.70	1.45	0.00	116.00	2.70	1.45	0.00
15.00	2.27	1.12	0.15	66.00	2.70	1.45	0.00	117.00	2.70	1.45	0.00
16.00	2.35	1.18	0.12	67.00	2.70	1.45	0.00	118.00	2.70	1.45	0.00
17.00	2.42	1.23	0.10	68.00	2.70	1.45	0.00	119.00	2.70	1.45	0.00
18.00	2.47	1.27	0.08	69.00	2.70	1.45	0.00	120.00	2.70	1.45	0.00
19.00	2.52	1.31	0.08	70.00	2.70	1.45	0.00				
20.00	2.56	1.34	0.07	71.00	2.70	1.45	0.00				
21.00	2.60	1.37	0.07	72.00	2.70	1.45	0.00				
22.00	2.64	1.40	0.06	73.00	2.70	1.45	0.00				
23.00	2.67	1.43	0.06	74.00	2.70	1.45	0.00				
24.00	2.70	1.45	0.05	75.00	2.70	1.45	0.00				
25.00	2.70	1.45	0.00	76.00	2.70	1.45	0.00				
26.00	2.70	1.45	0.00	77.00	2.70	1.45	0.00				
27.00	2.70	1.45	0.00	78.00	2.70	1.45	0.00				
28.00	2.70	1.45	0.00	79.00	2.70	1.45	0.00				
29.00	2.70	1.45	0.00	80.00	2.70	1.45	0.00				
30.00	2.70	1.45	0.00	81.00	2.70	1.45	0.00				
31.00	2.70	1.45	0.00	82.00	2.70	1.45	0.00				
32.00	2.70	1.45	0.00	83.00	2.70	1.45	0.00				
33.00	2.70	1.45	0.00	84.00	2.70	1.45	0.00				
34.00	2.70	1.45	0.00	85.00	2.70	1.45	0.00				
35.00	2.70	1.45	0.00	86.00	2.70	1.45	0.00				
36.00	2.70	1.45	0.00	87.00	2.70	1.45	0.00				
37.00	2.70	1.45	0.00	88.00	2.70	1.45	0.00				
38.00	2.70	1.45	0.00	89.00	2.70	1.45	0.00				
39.00	2.70	1.45	0.00	90.00	2.70	1.45	0.00				
40.00	2.70	1.45	0.00	91.00	2.70	1.45	0.00				
41.00	2.70	1.45	0.00	92.00	2.70	1.45	0.00				
42.00	2.70	1.45	0.00	93.00	2.70	1.45	0.00				
43.00	2.70	1.45	0.00	94.00	2.70	1.45	0.00				
44.00	2.70	1.45	0.00	95.00	2.70	1.45	0.00				
45.00	2.70	1.45	0.00	96.00	2.70	1.45	0.00				
46.00	2.70	1.45	0.00	97.00	2.70	1.45	0.00				
47.00	2.70	1.45	0.00	98.00	2.70	1.45	0.00				
48.00	2.70	1.45	0.00	99.00	2.70	1.45	0.00				
49.00	2.70	1.45	0.00	100.00	2.70	1.45	0.00				
50.00	2.70	1.45	0.00	101.00	2.70	1.45	0.00				
51.00	2.70	1.45	0.00	102.00	2.70	1.45	0.00				

Summary for Subcatchment 1a-2: PDA-1a-2

Runoff = 8.55 cfs @ 12.13 hrs, Volume= 0.750 af, Depth= 1.35"

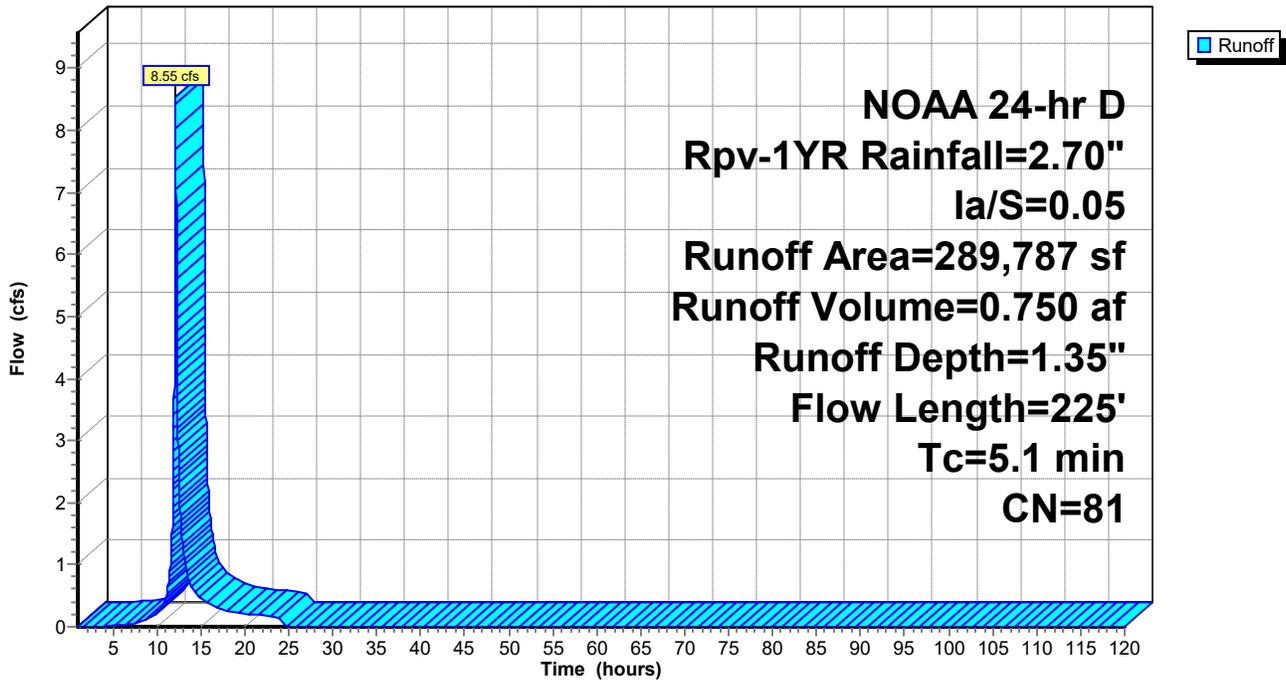
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
130,511	61	>75% Grass cover, Good, HSG B
* 159,276	98	combined impervious
289,787	81	Weighted Average
130,511		45.04% Pervious Area
159,276		54.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	25	0.0240	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
0.9	200	0.0050	3.66	212.41	Trap/Vee/Rect Channel Flow, OCF Bot.W=4.00' D=2.00' Z= 20.0 & 5.0 '/' Top.W=54.00' n= 0.030 Short grass
5.1	225	Total			

Subcatchment 1a-2: PDA-1a-2

Hydrograph



Hydrograph for Subcatchment 1a-2: PDA-1a-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	1.35	0.00	103.00	2.70	1.35	0.00
2.00	0.06	0.00	0.00	53.00	2.70	1.35	0.00	104.00	2.70	1.35	0.00
3.00	0.10	0.00	0.00	54.00	2.70	1.35	0.00	105.00	2.70	1.35	0.00
4.00	0.14	0.00	0.00	55.00	2.70	1.35	0.00	106.00	2.70	1.35	0.00
5.00	0.18	0.00	0.01	56.00	2.70	1.35	0.00	107.00	2.70	1.35	0.00
6.00	0.23	0.01	0.03	57.00	2.70	1.35	0.00	108.00	2.70	1.35	0.00
7.00	0.28	0.01	0.05	58.00	2.70	1.35	0.00	109.00	2.70	1.35	0.00
8.00	0.35	0.02	0.08	59.00	2.70	1.35	0.00	110.00	2.70	1.35	0.00
9.00	0.43	0.04	0.12	60.00	2.70	1.35	0.00	111.00	2.70	1.35	0.00
10.00	0.54	0.06	0.22	61.00	2.70	1.35	0.00	112.00	2.70	1.35	0.00
11.00	0.70	0.12	0.50	62.00	2.70	1.35	0.00	113.00	2.70	1.35	0.00
12.00	1.29	0.39	4.31	63.00	2.70	1.35	0.00	114.00	2.70	1.35	0.00
13.00	2.00	0.84	1.27	64.00	2.70	1.35	0.00	115.00	2.70	1.35	0.00
14.00	2.16	0.95	0.64	65.00	2.70	1.35	0.00	116.00	2.70	1.35	0.00
15.00	2.27	1.03	0.44	66.00	2.70	1.35	0.00	117.00	2.70	1.35	0.00
16.00	2.35	1.09	0.36	67.00	2.70	1.35	0.00	118.00	2.70	1.35	0.00
17.00	2.42	1.14	0.31	68.00	2.70	1.35	0.00	119.00	2.70	1.35	0.00
18.00	2.47	1.18	0.25	69.00	2.70	1.35	0.00	120.00	2.70	1.35	0.00
19.00	2.52	1.21	0.23	70.00	2.70	1.35	0.00				
20.00	2.56	1.24	0.21	71.00	2.70	1.35	0.00				
21.00	2.60	1.28	0.20	72.00	2.70	1.35	0.00				
22.00	2.64	1.30	0.18	73.00	2.70	1.35	0.00				
23.00	2.67	1.33	0.17	74.00	2.70	1.35	0.00				
24.00	2.70	1.35	0.15	75.00	2.70	1.35	0.00				
25.00	2.70	1.35	0.00	76.00	2.70	1.35	0.00				
26.00	2.70	1.35	0.00	77.00	2.70	1.35	0.00				
27.00	2.70	1.35	0.00	78.00	2.70	1.35	0.00				
28.00	2.70	1.35	0.00	79.00	2.70	1.35	0.00				
29.00	2.70	1.35	0.00	80.00	2.70	1.35	0.00				
30.00	2.70	1.35	0.00	81.00	2.70	1.35	0.00				
31.00	2.70	1.35	0.00	82.00	2.70	1.35	0.00				
32.00	2.70	1.35	0.00	83.00	2.70	1.35	0.00				
33.00	2.70	1.35	0.00	84.00	2.70	1.35	0.00				
34.00	2.70	1.35	0.00	85.00	2.70	1.35	0.00				
35.00	2.70	1.35	0.00	86.00	2.70	1.35	0.00				
36.00	2.70	1.35	0.00	87.00	2.70	1.35	0.00				
37.00	2.70	1.35	0.00	88.00	2.70	1.35	0.00				
38.00	2.70	1.35	0.00	89.00	2.70	1.35	0.00				
39.00	2.70	1.35	0.00	90.00	2.70	1.35	0.00				
40.00	2.70	1.35	0.00	91.00	2.70	1.35	0.00				
41.00	2.70	1.35	0.00	92.00	2.70	1.35	0.00				
42.00	2.70	1.35	0.00	93.00	2.70	1.35	0.00				
43.00	2.70	1.35	0.00	94.00	2.70	1.35	0.00				
44.00	2.70	1.35	0.00	95.00	2.70	1.35	0.00				
45.00	2.70	1.35	0.00	96.00	2.70	1.35	0.00				
46.00	2.70	1.35	0.00	97.00	2.70	1.35	0.00				
47.00	2.70	1.35	0.00	98.00	2.70	1.35	0.00				
48.00	2.70	1.35	0.00	99.00	2.70	1.35	0.00				
49.00	2.70	1.35	0.00	100.00	2.70	1.35	0.00				
50.00	2.70	1.35	0.00	101.00	2.70	1.35	0.00				
51.00	2.70	1.35	0.00	102.00	2.70	1.35	0.00				

Summary for Subcatchment 1a-3: PDA-1a-3

Runoff = 3.21 cfs @ 12.13 hrs, Volume= 0.273 af, Depth= 1.50"

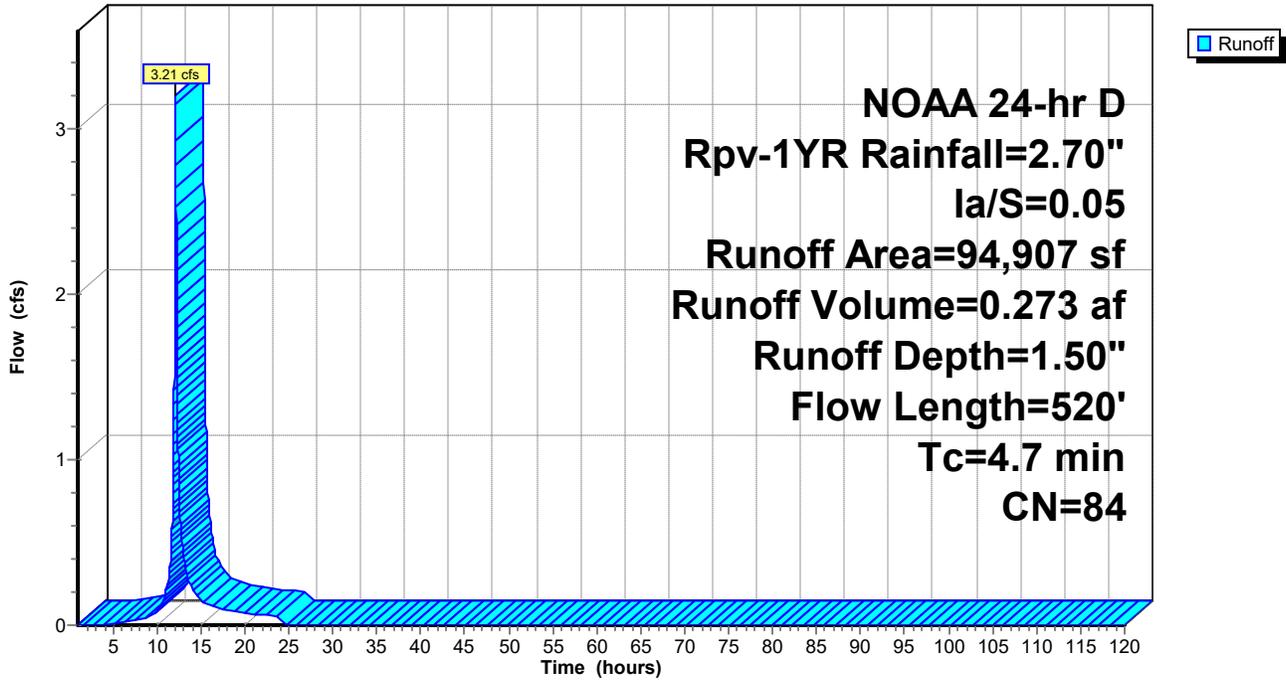
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
35,908	61	>75% Grass cover, Good, HSG B
* 58,999	98	Roofs, Paved parking, HSG B
94,907	84	Weighted Average
35,908		37.83% Pervious Area
58,999		62.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0020	0.49		Sheet Flow, SF Smooth surfaces n= 0.011 P2= 3.40"
0.4	20	0.0040	0.95		Shallow Concentrated Flow, SCF Grassed Waterway Kv= 15.0 fps
1.7	200	0.0050	2.00	6.01	Trap/Vee/Rect Channel Flow, Bot.W=1.00' D=0.50' Z= 10.0 '/' Top.W=11.00' n= 0.022 Earth, clean & straight
0.9	250	0.0060	4.64	371.02	Trap/Vee/Rect Channel Flow, across enclosed contour area Bot.W=20.00' D=2.00' Z= 10.0 '/' Top.W=60.00' n= 0.030 Short grass
4.7	520	Total			

Subcatchment 1a-3: PDA-1a-3

Hydrograph



Hydrograph for Subcatchment 1a-3: PDA-1a-3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	1.50	0.00	103.00	2.70	1.50	0.00
2.00	0.06	0.00	0.00	53.00	2.70	1.50	0.00	104.00	2.70	1.50	0.00
3.00	0.10	0.00	0.00	54.00	2.70	1.50	0.00	105.00	2.70	1.50	0.00
4.00	0.14	0.00	0.00	55.00	2.70	1.50	0.00	106.00	2.70	1.50	0.00
5.00	0.18	0.00	0.01	56.00	2.70	1.50	0.00	107.00	2.70	1.50	0.00
6.00	0.23	0.01	0.01	57.00	2.70	1.50	0.00	108.00	2.70	1.50	0.00
7.00	0.28	0.02	0.02	58.00	2.70	1.50	0.00	109.00	2.70	1.50	0.00
8.00	0.35	0.03	0.03	59.00	2.70	1.50	0.00	110.00	2.70	1.50	0.00
9.00	0.43	0.05	0.05	60.00	2.70	1.50	0.00	111.00	2.70	1.50	0.00
10.00	0.54	0.08	0.09	61.00	2.70	1.50	0.00	112.00	2.70	1.50	0.00
11.00	0.70	0.15	0.19	62.00	2.70	1.50	0.00	113.00	2.70	1.50	0.00
12.00	1.29	0.46	1.66	63.00	2.70	1.50	0.00	114.00	2.70	1.50	0.00
13.00	2.00	0.95	0.45	64.00	2.70	1.50	0.00	115.00	2.70	1.50	0.00
14.00	2.16	1.08	0.23	65.00	2.70	1.50	0.00	116.00	2.70	1.50	0.00
15.00	2.27	1.16	0.16	66.00	2.70	1.50	0.00	117.00	2.70	1.50	0.00
16.00	2.35	1.22	0.13	67.00	2.70	1.50	0.00	118.00	2.70	1.50	0.00
17.00	2.42	1.27	0.11	68.00	2.70	1.50	0.00	119.00	2.70	1.50	0.00
18.00	2.47	1.32	0.09	69.00	2.70	1.50	0.00	120.00	2.70	1.50	0.00
19.00	2.52	1.35	0.08	70.00	2.70	1.50	0.00				
20.00	2.56	1.39	0.07	71.00	2.70	1.50	0.00				
21.00	2.60	1.42	0.07	72.00	2.70	1.50	0.00				
22.00	2.64	1.45	0.06	73.00	2.70	1.50	0.00				
23.00	2.67	1.48	0.06	74.00	2.70	1.50	0.00				
24.00	2.70	1.50	0.05	75.00	2.70	1.50	0.00				
25.00	2.70	1.50	0.00	76.00	2.70	1.50	0.00				
26.00	2.70	1.50	0.00	77.00	2.70	1.50	0.00				
27.00	2.70	1.50	0.00	78.00	2.70	1.50	0.00				
28.00	2.70	1.50	0.00	79.00	2.70	1.50	0.00				
29.00	2.70	1.50	0.00	80.00	2.70	1.50	0.00				
30.00	2.70	1.50	0.00	81.00	2.70	1.50	0.00				
31.00	2.70	1.50	0.00	82.00	2.70	1.50	0.00				
32.00	2.70	1.50	0.00	83.00	2.70	1.50	0.00				
33.00	2.70	1.50	0.00	84.00	2.70	1.50	0.00				
34.00	2.70	1.50	0.00	85.00	2.70	1.50	0.00				
35.00	2.70	1.50	0.00	86.00	2.70	1.50	0.00				
36.00	2.70	1.50	0.00	87.00	2.70	1.50	0.00				
37.00	2.70	1.50	0.00	88.00	2.70	1.50	0.00				
38.00	2.70	1.50	0.00	89.00	2.70	1.50	0.00				
39.00	2.70	1.50	0.00	90.00	2.70	1.50	0.00				
40.00	2.70	1.50	0.00	91.00	2.70	1.50	0.00				
41.00	2.70	1.50	0.00	92.00	2.70	1.50	0.00				
42.00	2.70	1.50	0.00	93.00	2.70	1.50	0.00				
43.00	2.70	1.50	0.00	94.00	2.70	1.50	0.00				
44.00	2.70	1.50	0.00	95.00	2.70	1.50	0.00				
45.00	2.70	1.50	0.00	96.00	2.70	1.50	0.00				
46.00	2.70	1.50	0.00	97.00	2.70	1.50	0.00				
47.00	2.70	1.50	0.00	98.00	2.70	1.50	0.00				
48.00	2.70	1.50	0.00	99.00	2.70	1.50	0.00				
49.00	2.70	1.50	0.00	100.00	2.70	1.50	0.00				
50.00	2.70	1.50	0.00	101.00	2.70	1.50	0.00				
51.00	2.70	1.50	0.00	102.00	2.70	1.50	0.00				

Summary for Subcatchment 1b: DA-1b

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

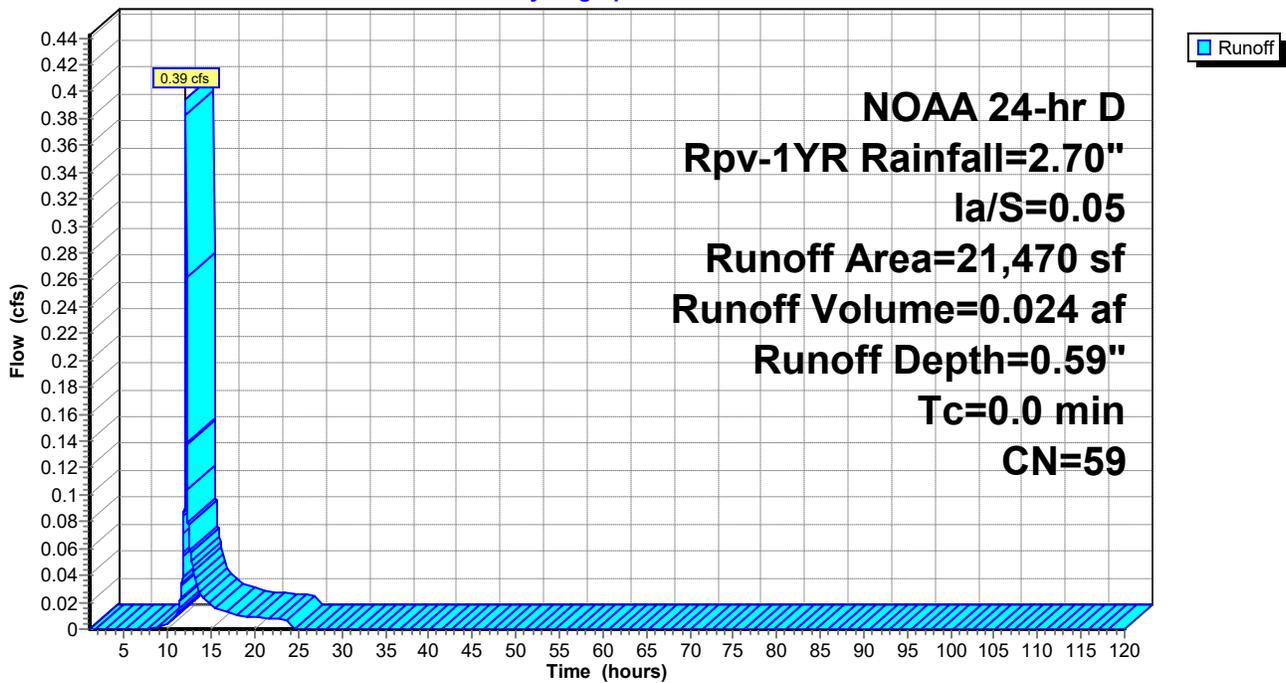
Runoff = 0.39 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
20,717	58	Woods/grass comb., Good, HSG B
753	98	Roofs, HSG B
21,470	59	Weighted Average
20,717		96.49% Pervious Area
753		3.51% Impervious Area

Subcatchment 1b: DA-1b

Hydrograph



Hydrograph for Subcatchment 1b: DA-1b

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	0.59	0.00	103.00	2.70	0.59	0.00
2.00	0.06	0.00	0.00	53.00	2.70	0.59	0.00	104.00	2.70	0.59	0.00
3.00	0.10	0.00	0.00	54.00	2.70	0.59	0.00	105.00	2.70	0.59	0.00
4.00	0.14	0.00	0.00	55.00	2.70	0.59	0.00	106.00	2.70	0.59	0.00
5.00	0.18	0.00	0.00	56.00	2.70	0.59	0.00	107.00	2.70	0.59	0.00
6.00	0.23	0.00	0.00	57.00	2.70	0.59	0.00	108.00	2.70	0.59	0.00
7.00	0.28	0.00	0.00	58.00	2.70	0.59	0.00	109.00	2.70	0.59	0.00
8.00	0.35	0.00	0.00	59.00	2.70	0.59	0.00	110.00	2.70	0.59	0.00
9.00	0.43	0.00	0.00	60.00	2.70	0.59	0.00	111.00	2.70	0.59	0.00
10.00	0.54	0.00	0.00	61.00	2.70	0.59	0.00	112.00	2.70	0.59	0.00
11.00	0.70	0.02	0.01	62.00	2.70	0.59	0.00	113.00	2.70	0.59	0.00
12.00	1.29	0.11	0.25	63.00	2.70	0.59	0.00	114.00	2.70	0.59	0.00
13.00	2.00	0.32	0.04	64.00	2.70	0.59	0.00	115.00	2.70	0.59	0.00
14.00	2.16	0.38	0.02	65.00	2.70	0.59	0.00	116.00	2.70	0.59	0.00
15.00	2.27	0.42	0.02	66.00	2.70	0.59	0.00	117.00	2.70	0.59	0.00
16.00	2.35	0.45	0.01	67.00	2.70	0.59	0.00	118.00	2.70	0.59	0.00
17.00	2.42	0.47	0.01	68.00	2.70	0.59	0.00	119.00	2.70	0.59	0.00
18.00	2.47	0.50	0.01	69.00	2.70	0.59	0.00	120.00	2.70	0.59	0.00
19.00	2.52	0.52	0.01	70.00	2.70	0.59	0.00				
20.00	2.56	0.53	0.01	71.00	2.70	0.59	0.00				
21.00	2.60	0.55	0.01	72.00	2.70	0.59	0.00				
22.00	2.64	0.57	0.01	73.00	2.70	0.59	0.00				
23.00	2.67	0.58	0.01	74.00	2.70	0.59	0.00				
24.00	2.70	0.59	0.00	75.00	2.70	0.59	0.00				
25.00	2.70	0.59	0.00	76.00	2.70	0.59	0.00				
26.00	2.70	0.59	0.00	77.00	2.70	0.59	0.00				
27.00	2.70	0.59	0.00	78.00	2.70	0.59	0.00				
28.00	2.70	0.59	0.00	79.00	2.70	0.59	0.00				
29.00	2.70	0.59	0.00	80.00	2.70	0.59	0.00				
30.00	2.70	0.59	0.00	81.00	2.70	0.59	0.00				
31.00	2.70	0.59	0.00	82.00	2.70	0.59	0.00				
32.00	2.70	0.59	0.00	83.00	2.70	0.59	0.00				
33.00	2.70	0.59	0.00	84.00	2.70	0.59	0.00				
34.00	2.70	0.59	0.00	85.00	2.70	0.59	0.00				
35.00	2.70	0.59	0.00	86.00	2.70	0.59	0.00				
36.00	2.70	0.59	0.00	87.00	2.70	0.59	0.00				
37.00	2.70	0.59	0.00	88.00	2.70	0.59	0.00				
38.00	2.70	0.59	0.00	89.00	2.70	0.59	0.00				
39.00	2.70	0.59	0.00	90.00	2.70	0.59	0.00				
40.00	2.70	0.59	0.00	91.00	2.70	0.59	0.00				
41.00	2.70	0.59	0.00	92.00	2.70	0.59	0.00				
42.00	2.70	0.59	0.00	93.00	2.70	0.59	0.00				
43.00	2.70	0.59	0.00	94.00	2.70	0.59	0.00				
44.00	2.70	0.59	0.00	95.00	2.70	0.59	0.00				
45.00	2.70	0.59	0.00	96.00	2.70	0.59	0.00				
46.00	2.70	0.59	0.00	97.00	2.70	0.59	0.00				
47.00	2.70	0.59	0.00	98.00	2.70	0.59	0.00				
48.00	2.70	0.59	0.00	99.00	2.70	0.59	0.00				
49.00	2.70	0.59	0.00	100.00	2.70	0.59	0.00				
50.00	2.70	0.59	0.00	101.00	2.70	0.59	0.00				
51.00	2.70	0.59	0.00	102.00	2.70	0.59	0.00				

Summary for Subcatchment 1c: PDA-1c

Runoff = 1.37 cfs @ 12.96 hrs, Volume= 0.476 af, Depth= 0.88"

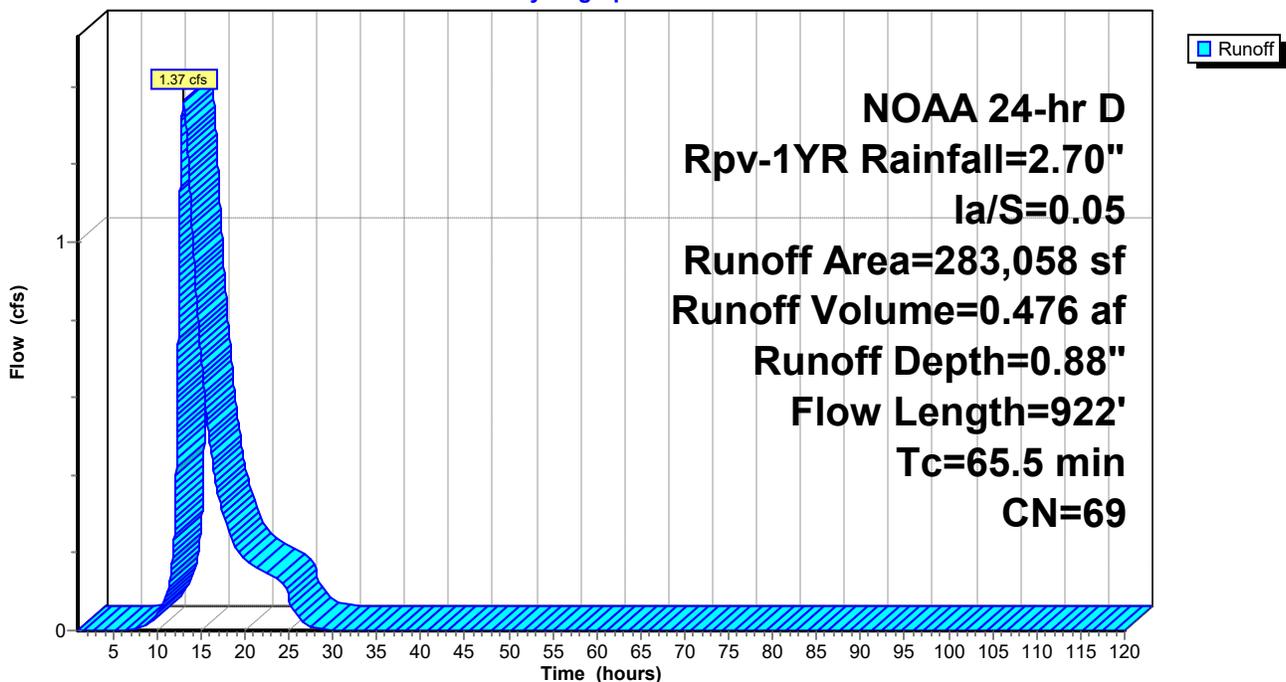
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
163,181	48	Brush, Good, HSG B
96,607	98	Roofs, HSG B
* 21,670	98	filtration Pad
* 1,600	98	leachate pad
283,058	69	Weighted Average
163,181		57.65% Pervious Area
119,877		42.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0100	0.09		Sheet Flow, SF from berm/Landscape buffer Grass: Dense n= 0.240 P2= 3.40"
1.6	125	0.0080	1.34		Shallow Concentrated Flow, SCF-through grass/Native Perennials Grassed Waterway Kv= 15.0 fps
45.6	697	0.0050	0.25	3.44	Channel Flow, OCF Trap Swale Area= 13.5 sf Perim= 40.0' r= 0.34' n= 0.200
65.5	922	Total			

Subcatchment 1c: PDA-1c

Hydrograph



Hydrograph for Subcatchment 1c: PDA-1c

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	0.88	0.00	103.00	2.70	0.88	0.00
2.00	0.06	0.00	0.00	53.00	2.70	0.88	0.00	104.00	2.70	0.88	0.00
3.00	0.10	0.00	0.00	54.00	2.70	0.88	0.00	105.00	2.70	0.88	0.00
4.00	0.14	0.00	0.00	55.00	2.70	0.88	0.00	106.00	2.70	0.88	0.00
5.00	0.18	0.00	0.00	56.00	2.70	0.88	0.00	107.00	2.70	0.88	0.00
6.00	0.23	0.00	0.00	57.00	2.70	0.88	0.00	108.00	2.70	0.88	0.00
7.00	0.28	0.00	0.00	58.00	2.70	0.88	0.00	109.00	2.70	0.88	0.00
8.00	0.35	0.00	0.01	59.00	2.70	0.88	0.00	110.00	2.70	0.88	0.00
9.00	0.43	0.01	0.02	60.00	2.70	0.88	0.00	111.00	2.70	0.88	0.00
10.00	0.54	0.02	0.04	61.00	2.70	0.88	0.00	112.00	2.70	0.88	0.00
11.00	0.70	0.05	0.08	62.00	2.70	0.88	0.00	113.00	2.70	0.88	0.00
12.00	1.29	0.21	0.26	63.00	2.70	0.88	0.00	114.00	2.70	0.88	0.00
13.00	2.00	0.50	1.36	64.00	2.70	0.88	0.00	115.00	2.70	0.88	0.00
14.00	2.16	0.59	1.04	65.00	2.70	0.88	0.00	116.00	2.70	0.88	0.00
15.00	2.27	0.64	0.71	66.00	2.70	0.88	0.00	117.00	2.70	0.88	0.00
16.00	2.35	0.68	0.49	67.00	2.70	0.88	0.00	118.00	2.70	0.88	0.00
17.00	2.42	0.72	0.35	68.00	2.70	0.88	0.00	119.00	2.70	0.88	0.00
18.00	2.47	0.75	0.27	69.00	2.70	0.88	0.00	120.00	2.70	0.88	0.00
19.00	2.52	0.77	0.21	70.00	2.70	0.88	0.00				
20.00	2.56	0.80	0.18	71.00	2.70	0.88	0.00				
21.00	2.60	0.82	0.16	72.00	2.70	0.88	0.00				
22.00	2.64	0.84	0.15	73.00	2.70	0.88	0.00				
23.00	2.67	0.86	0.14	74.00	2.70	0.88	0.00				
24.00	2.70	0.88	0.13	75.00	2.70	0.88	0.00				
25.00	2.70	0.88	0.08	76.00	2.70	0.88	0.00				
26.00	2.70	0.88	0.04	77.00	2.70	0.88	0.00				
27.00	2.70	0.88	0.02	78.00	2.70	0.88	0.00				
28.00	2.70	0.88	0.01	79.00	2.70	0.88	0.00				
29.00	2.70	0.88	0.00	80.00	2.70	0.88	0.00				
30.00	2.70	0.88	0.00	81.00	2.70	0.88	0.00				
31.00	2.70	0.88	0.00	82.00	2.70	0.88	0.00				
32.00	2.70	0.88	0.00	83.00	2.70	0.88	0.00				
33.00	2.70	0.88	0.00	84.00	2.70	0.88	0.00				
34.00	2.70	0.88	0.00	85.00	2.70	0.88	0.00				
35.00	2.70	0.88	0.00	86.00	2.70	0.88	0.00				
36.00	2.70	0.88	0.00	87.00	2.70	0.88	0.00				
37.00	2.70	0.88	0.00	88.00	2.70	0.88	0.00				
38.00	2.70	0.88	0.00	89.00	2.70	0.88	0.00				
39.00	2.70	0.88	0.00	90.00	2.70	0.88	0.00				
40.00	2.70	0.88	0.00	91.00	2.70	0.88	0.00				
41.00	2.70	0.88	0.00	92.00	2.70	0.88	0.00				
42.00	2.70	0.88	0.00	93.00	2.70	0.88	0.00				
43.00	2.70	0.88	0.00	94.00	2.70	0.88	0.00				
44.00	2.70	0.88	0.00	95.00	2.70	0.88	0.00				
45.00	2.70	0.88	0.00	96.00	2.70	0.88	0.00				
46.00	2.70	0.88	0.00	97.00	2.70	0.88	0.00				
47.00	2.70	0.88	0.00	98.00	2.70	0.88	0.00				
48.00	2.70	0.88	0.00	99.00	2.70	0.88	0.00				
49.00	2.70	0.88	0.00	100.00	2.70	0.88	0.00				
50.00	2.70	0.88	0.00	101.00	2.70	0.88	0.00				
51.00	2.70	0.88	0.00	102.00	2.70	0.88	0.00				

Summary for Subcatchment DA-2 Pre-: DA-2

Initial Mannings on trap swale set at 0.15 pending depth assessment

Runoff = 1.28 cfs @ 12.54 hrs, Volume= 0.297 af, Depth= 0.76"

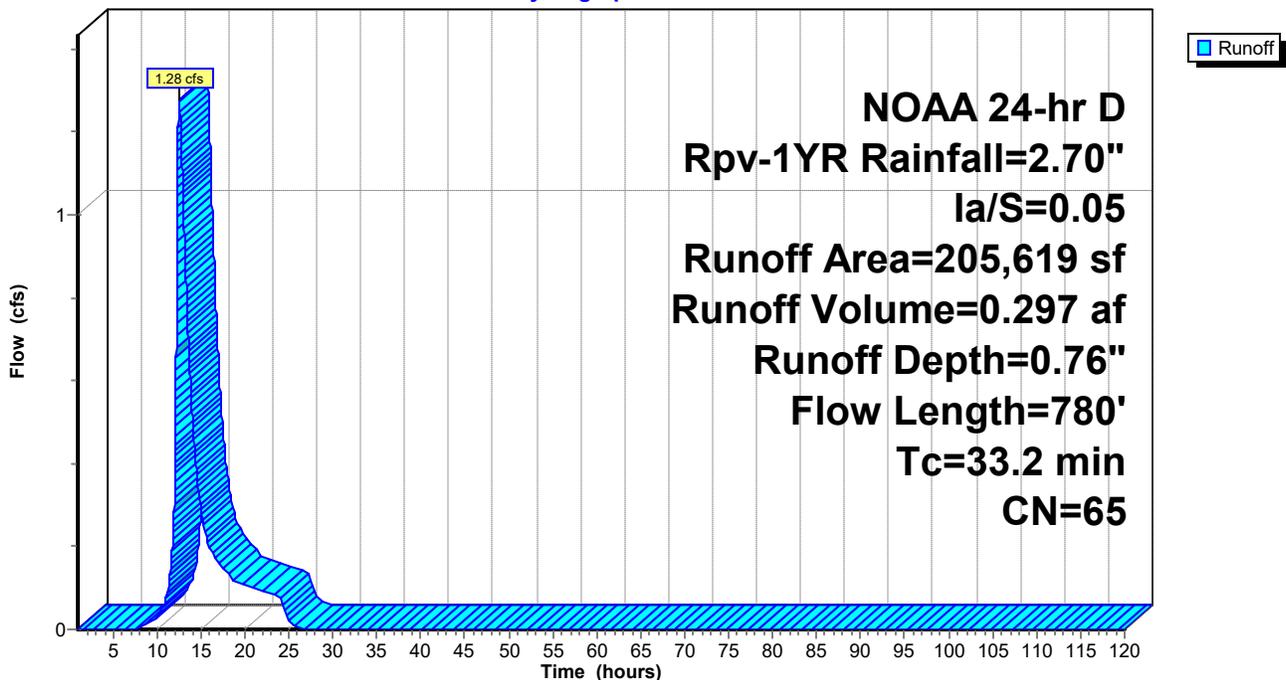
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
181,287	61	>75% Grass cover, Good, HSG B
6,845	98	Paved parking, HSG B
17,487	96	Gravel surface, HSG B
205,619	65	Weighted Average
198,774		96.67% Pervious Area
6,845		3.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	100	0.0025	0.08		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.40"
11.4	680	0.0200	0.99		Shallow Concentrated Flow, SCF-pad shoulder Short Grass Pasture Kv= 7.0 fps
33.2	780	Total			

Subcatchment DA-2 Pre-: DA-2

Hydrograph



Hydrograph for Subcatchment DA-2 Pre-: DA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	0.76	0.00	103.00	2.70	0.76	0.00
2.00	0.06	0.00	0.00	53.00	2.70	0.76	0.00	104.00	2.70	0.76	0.00
3.00	0.10	0.00	0.00	54.00	2.70	0.76	0.00	105.00	2.70	0.76	0.00
4.00	0.14	0.00	0.00	55.00	2.70	0.76	0.00	106.00	2.70	0.76	0.00
5.00	0.18	0.00	0.00	56.00	2.70	0.76	0.00	107.00	2.70	0.76	0.00
6.00	0.23	0.00	0.00	57.00	2.70	0.76	0.00	108.00	2.70	0.76	0.00
7.00	0.28	0.00	0.00	58.00	2.70	0.76	0.00	109.00	2.70	0.76	0.00
8.00	0.35	0.00	0.00	59.00	2.70	0.76	0.00	110.00	2.70	0.76	0.00
9.00	0.43	0.00	0.01	60.00	2.70	0.76	0.00	111.00	2.70	0.76	0.00
10.00	0.54	0.01	0.03	61.00	2.70	0.76	0.00	112.00	2.70	0.76	0.00
11.00	0.70	0.03	0.07	62.00	2.70	0.76	0.00	113.00	2.70	0.76	0.00
12.00	1.29	0.16	0.32	63.00	2.70	0.76	0.00	114.00	2.70	0.76	0.00
13.00	2.00	0.42	1.03	64.00	2.70	0.76	0.00	115.00	2.70	0.76	0.00
14.00	2.16	0.49	0.52	65.00	2.70	0.76	0.00	116.00	2.70	0.76	0.00
15.00	2.27	0.54	0.29	66.00	2.70	0.76	0.00	117.00	2.70	0.76	0.00
16.00	2.35	0.58	0.20	67.00	2.70	0.76	0.00	118.00	2.70	0.76	0.00
17.00	2.42	0.61	0.16	68.00	2.70	0.76	0.00	119.00	2.70	0.76	0.00
18.00	2.47	0.64	0.14	69.00	2.70	0.76	0.00	120.00	2.70	0.76	0.00
19.00	2.52	0.66	0.11	70.00	2.70	0.76	0.00				
20.00	2.56	0.68	0.11	71.00	2.70	0.76	0.00				
21.00	2.60	0.70	0.10	72.00	2.70	0.76	0.00				
22.00	2.64	0.72	0.09	73.00	2.70	0.76	0.00				
23.00	2.67	0.74	0.09	74.00	2.70	0.76	0.00				
24.00	2.70	0.76	0.08	75.00	2.70	0.76	0.00				
25.00	2.70	0.76	0.02	76.00	2.70	0.76	0.00				
26.00	2.70	0.76	0.00	77.00	2.70	0.76	0.00				
27.00	2.70	0.76	0.00	78.00	2.70	0.76	0.00				
28.00	2.70	0.76	0.00	79.00	2.70	0.76	0.00				
29.00	2.70	0.76	0.00	80.00	2.70	0.76	0.00				
30.00	2.70	0.76	0.00	81.00	2.70	0.76	0.00				
31.00	2.70	0.76	0.00	82.00	2.70	0.76	0.00				
32.00	2.70	0.76	0.00	83.00	2.70	0.76	0.00				
33.00	2.70	0.76	0.00	84.00	2.70	0.76	0.00				
34.00	2.70	0.76	0.00	85.00	2.70	0.76	0.00				
35.00	2.70	0.76	0.00	86.00	2.70	0.76	0.00				
36.00	2.70	0.76	0.00	87.00	2.70	0.76	0.00				
37.00	2.70	0.76	0.00	88.00	2.70	0.76	0.00				
38.00	2.70	0.76	0.00	89.00	2.70	0.76	0.00				
39.00	2.70	0.76	0.00	90.00	2.70	0.76	0.00				
40.00	2.70	0.76	0.00	91.00	2.70	0.76	0.00				
41.00	2.70	0.76	0.00	92.00	2.70	0.76	0.00				
42.00	2.70	0.76	0.00	93.00	2.70	0.76	0.00				
43.00	2.70	0.76	0.00	94.00	2.70	0.76	0.00				
44.00	2.70	0.76	0.00	95.00	2.70	0.76	0.00				
45.00	2.70	0.76	0.00	96.00	2.70	0.76	0.00				
46.00	2.70	0.76	0.00	97.00	2.70	0.76	0.00				
47.00	2.70	0.76	0.00	98.00	2.70	0.76	0.00				
48.00	2.70	0.76	0.00	99.00	2.70	0.76	0.00				
49.00	2.70	0.76	0.00	100.00	2.70	0.76	0.00				
50.00	2.70	0.76	0.00	101.00	2.70	0.76	0.00				
51.00	2.70	0.76	0.00	102.00	2.70	0.76	0.00				

Summary for Subcatchment PDA-1b: PDA-1b

Runoff = 0.11 cfs @ 12.51 hrs, Volume= 0.026 af, Depth= 0.59"

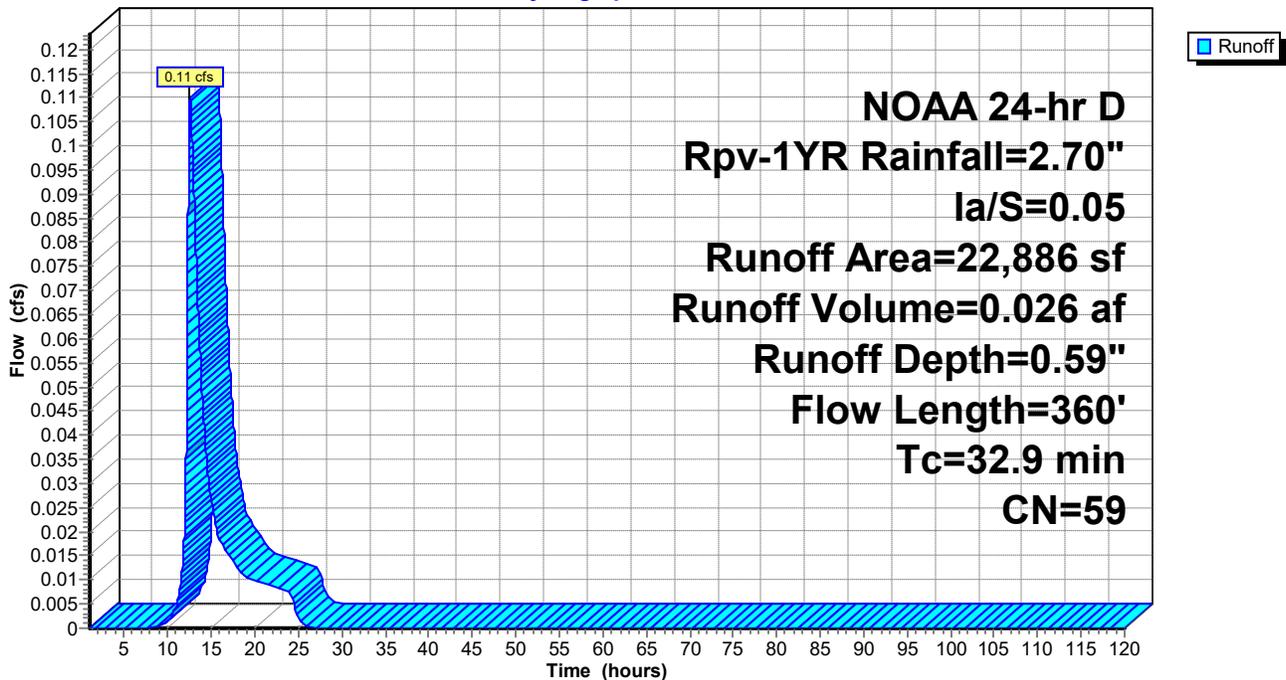
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
22,133	58	Woods/grass comb., Good, HSG B
753	98	Roofs, HSG B
22,886	59	Weighted Average
22,133		96.71% Pervious Area
753		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.6	100	0.0030	0.06		Sheet Flow, newly graded grass SF Grass: Dense n= 0.240 P2= 3.40"
0.2	15	0.0470	1.52		Shallow Concentrated Flow, SCF- pass MW Short Grass Pasture Kv= 7.0 fps
3.1	245	0.0050	1.32	9.24	Channel Flow, OCF-Regraded Trap Swale Area= 7.0 sf Perim= 24.0' r= 0.29' n= 0.035 Earth, dense weeds
32.9	360	Total			

Subcatchment PDA-1b: PDA-1b

Hydrograph



Hydrograph for Subcatchment PDA-1b: PDA-1b

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	0.59	0.00	103.00	2.70	0.59	0.00
2.00	0.06	0.00	0.00	53.00	2.70	0.59	0.00	104.00	2.70	0.59	0.00
3.00	0.10	0.00	0.00	54.00	2.70	0.59	0.00	105.00	2.70	0.59	0.00
4.00	0.14	0.00	0.00	55.00	2.70	0.59	0.00	106.00	2.70	0.59	0.00
5.00	0.18	0.00	0.00	56.00	2.70	0.59	0.00	107.00	2.70	0.59	0.00
6.00	0.23	0.00	0.00	57.00	2.70	0.59	0.00	108.00	2.70	0.59	0.00
7.00	0.28	0.00	0.00	58.00	2.70	0.59	0.00	109.00	2.70	0.59	0.00
8.00	0.35	0.00	0.00	59.00	2.70	0.59	0.00	110.00	2.70	0.59	0.00
9.00	0.43	0.00	0.00	60.00	2.70	0.59	0.00	111.00	2.70	0.59	0.00
10.00	0.54	0.00	0.00	61.00	2.70	0.59	0.00	112.00	2.70	0.59	0.00
11.00	0.70	0.02	0.00	62.00	2.70	0.59	0.00	113.00	2.70	0.59	0.00
12.00	1.29	0.11	0.03	63.00	2.70	0.59	0.00	114.00	2.70	0.59	0.00
13.00	2.00	0.32	0.09	64.00	2.70	0.59	0.00	115.00	2.70	0.59	0.00
14.00	2.16	0.38	0.05	65.00	2.70	0.59	0.00	116.00	2.70	0.59	0.00
15.00	2.27	0.42	0.03	66.00	2.70	0.59	0.00	117.00	2.70	0.59	0.00
16.00	2.35	0.45	0.02	67.00	2.70	0.59	0.00	118.00	2.70	0.59	0.00
17.00	2.42	0.47	0.01	68.00	2.70	0.59	0.00	119.00	2.70	0.59	0.00
18.00	2.47	0.50	0.01	69.00	2.70	0.59	0.00	120.00	2.70	0.59	0.00
19.00	2.52	0.52	0.01	70.00	2.70	0.59	0.00				
20.00	2.56	0.53	0.01	71.00	2.70	0.59	0.00				
21.00	2.60	0.55	0.01	72.00	2.70	0.59	0.00				
22.00	2.64	0.57	0.01	73.00	2.70	0.59	0.00				
23.00	2.67	0.58	0.01	74.00	2.70	0.59	0.00				
24.00	2.70	0.59	0.01	75.00	2.70	0.59	0.00				
25.00	2.70	0.59	0.00	76.00	2.70	0.59	0.00				
26.00	2.70	0.59	0.00	77.00	2.70	0.59	0.00				
27.00	2.70	0.59	0.00	78.00	2.70	0.59	0.00				
28.00	2.70	0.59	0.00	79.00	2.70	0.59	0.00				
29.00	2.70	0.59	0.00	80.00	2.70	0.59	0.00				
30.00	2.70	0.59	0.00	81.00	2.70	0.59	0.00				
31.00	2.70	0.59	0.00	82.00	2.70	0.59	0.00				
32.00	2.70	0.59	0.00	83.00	2.70	0.59	0.00				
33.00	2.70	0.59	0.00	84.00	2.70	0.59	0.00				
34.00	2.70	0.59	0.00	85.00	2.70	0.59	0.00				
35.00	2.70	0.59	0.00	86.00	2.70	0.59	0.00				
36.00	2.70	0.59	0.00	87.00	2.70	0.59	0.00				
37.00	2.70	0.59	0.00	88.00	2.70	0.59	0.00				
38.00	2.70	0.59	0.00	89.00	2.70	0.59	0.00				
39.00	2.70	0.59	0.00	90.00	2.70	0.59	0.00				
40.00	2.70	0.59	0.00	91.00	2.70	0.59	0.00				
41.00	2.70	0.59	0.00	92.00	2.70	0.59	0.00				
42.00	2.70	0.59	0.00	93.00	2.70	0.59	0.00				
43.00	2.70	0.59	0.00	94.00	2.70	0.59	0.00				
44.00	2.70	0.59	0.00	95.00	2.70	0.59	0.00				
45.00	2.70	0.59	0.00	96.00	2.70	0.59	0.00				
46.00	2.70	0.59	0.00	97.00	2.70	0.59	0.00				
47.00	2.70	0.59	0.00	98.00	2.70	0.59	0.00				
48.00	2.70	0.59	0.00	99.00	2.70	0.59	0.00				
49.00	2.70	0.59	0.00	100.00	2.70	0.59	0.00				
50.00	2.70	0.59	0.00	101.00	2.70	0.59	0.00				
51.00	2.70	0.59	0.00	102.00	2.70	0.59	0.00				

Summary for Subcatchment PDA-1c: PDA-1c

Runoff = 1.11 cfs @ 13.08 hrs, Volume= 0.408 af, Depth= 0.82"

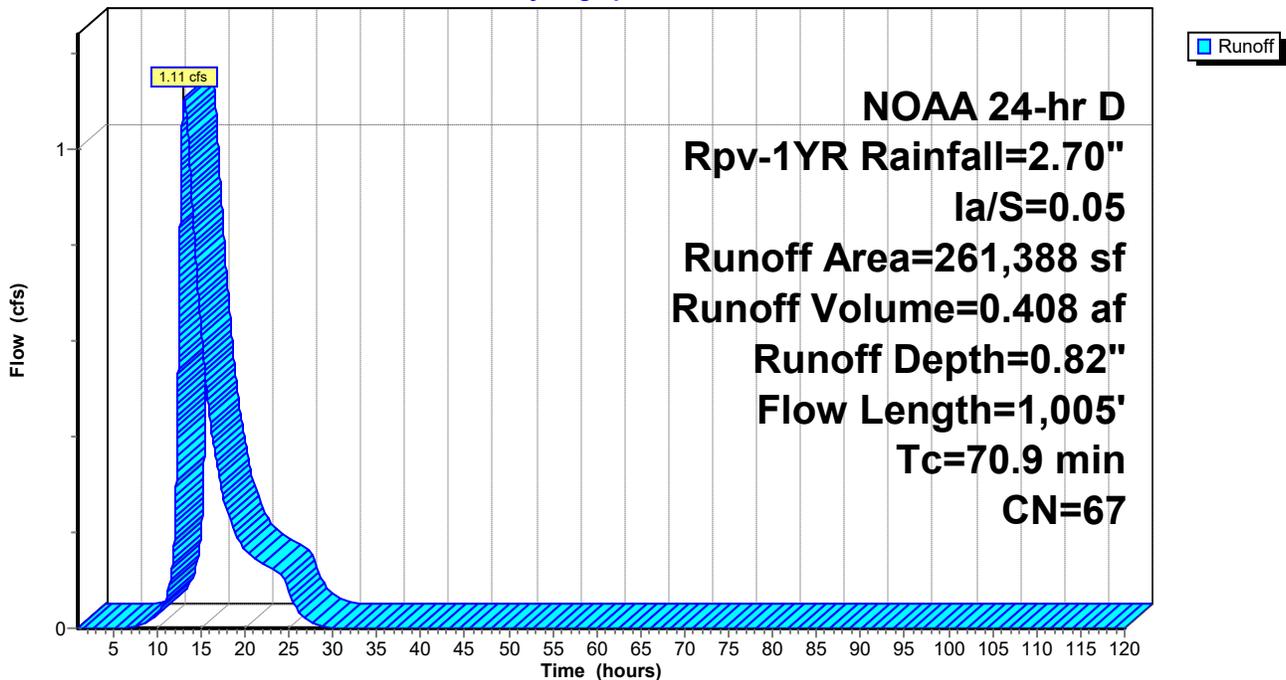
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
163,181	48	Brush, Good, HSG B
96,607	98	Roofs, HSG B
* 1,600	98	leachate tank pad
261,388	67	Weighted Average
163,181		62.43% Pervious Area
98,207		37.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.0100	0.09		Sheet Flow, SF from berm/Landscape buffer Grass: Dense n= 0.240 P2= 3.40"
1.6	125	0.0080	1.34		Shallow Concentrated Flow, SCF-through grass/Native Perennials Grassed Waterway Kv= 15.0 fps
51.0	780	0.0050	0.25	3.44	Channel Flow, OCF Trap Swale Area= 13.5 sf Perim= 40.0' r= 0.34' n= 0.200
70.9	1,005	Total			

Subcatchment PDA-1c: PDA-1c

Hydrograph



Hydrograph for Subcatchment PDA-1c: PDA-1c

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	0.82	0.00	103.00	2.70	0.82	0.00
2.00	0.06	0.00	0.00	53.00	2.70	0.82	0.00	104.00	2.70	0.82	0.00
3.00	0.10	0.00	0.00	54.00	2.70	0.82	0.00	105.00	2.70	0.82	0.00
4.00	0.14	0.00	0.00	55.00	2.70	0.82	0.00	106.00	2.70	0.82	0.00
5.00	0.18	0.00	0.00	56.00	2.70	0.82	0.00	107.00	2.70	0.82	0.00
6.00	0.23	0.00	0.00	57.00	2.70	0.82	0.00	108.00	2.70	0.82	0.00
7.00	0.28	0.00	0.00	58.00	2.70	0.82	0.00	109.00	2.70	0.82	0.00
8.00	0.35	0.00	0.00	59.00	2.70	0.82	0.00	110.00	2.70	0.82	0.00
9.00	0.43	0.01	0.01	60.00	2.70	0.82	0.00	111.00	2.70	0.82	0.00
10.00	0.54	0.02	0.03	61.00	2.70	0.82	0.00	112.00	2.70	0.82	0.00
11.00	0.70	0.04	0.06	62.00	2.70	0.82	0.00	113.00	2.70	0.82	0.00
12.00	1.29	0.18	0.19	63.00	2.70	0.82	0.00	114.00	2.70	0.82	0.00
13.00	2.00	0.46	1.10	64.00	2.70	0.82	0.00	115.00	2.70	0.82	0.00
14.00	2.16	0.54	0.89	65.00	2.70	0.82	0.00	116.00	2.70	0.82	0.00
15.00	2.27	0.59	0.63	66.00	2.70	0.82	0.00	117.00	2.70	0.82	0.00
16.00	2.35	0.63	0.45	67.00	2.70	0.82	0.00	118.00	2.70	0.82	0.00
17.00	2.42	0.66	0.32	68.00	2.70	0.82	0.00	119.00	2.70	0.82	0.00
18.00	2.47	0.69	0.24	69.00	2.70	0.82	0.00	120.00	2.70	0.82	0.00
19.00	2.52	0.72	0.20	70.00	2.70	0.82	0.00				
20.00	2.56	0.74	0.16	71.00	2.70	0.82	0.00				
21.00	2.60	0.76	0.15	72.00	2.70	0.82	0.00				
22.00	2.64	0.78	0.13	73.00	2.70	0.82	0.00				
23.00	2.67	0.80	0.12	74.00	2.70	0.82	0.00				
24.00	2.70	0.82	0.12	75.00	2.70	0.82	0.00				
25.00	2.70	0.82	0.08	76.00	2.70	0.82	0.00				
26.00	2.70	0.82	0.04	77.00	2.70	0.82	0.00				
27.00	2.70	0.82	0.02	78.00	2.70	0.82	0.00				
28.00	2.70	0.82	0.01	79.00	2.70	0.82	0.00				
29.00	2.70	0.82	0.00	80.00	2.70	0.82	0.00				
30.00	2.70	0.82	0.00	81.00	2.70	0.82	0.00				
31.00	2.70	0.82	0.00	82.00	2.70	0.82	0.00				
32.00	2.70	0.82	0.00	83.00	2.70	0.82	0.00				
33.00	2.70	0.82	0.00	84.00	2.70	0.82	0.00				
34.00	2.70	0.82	0.00	85.00	2.70	0.82	0.00				
35.00	2.70	0.82	0.00	86.00	2.70	0.82	0.00				
36.00	2.70	0.82	0.00	87.00	2.70	0.82	0.00				
37.00	2.70	0.82	0.00	88.00	2.70	0.82	0.00				
38.00	2.70	0.82	0.00	89.00	2.70	0.82	0.00				
39.00	2.70	0.82	0.00	90.00	2.70	0.82	0.00				
40.00	2.70	0.82	0.00	91.00	2.70	0.82	0.00				
41.00	2.70	0.82	0.00	92.00	2.70	0.82	0.00				
42.00	2.70	0.82	0.00	93.00	2.70	0.82	0.00				
43.00	2.70	0.82	0.00	94.00	2.70	0.82	0.00				
44.00	2.70	0.82	0.00	95.00	2.70	0.82	0.00				
45.00	2.70	0.82	0.00	96.00	2.70	0.82	0.00				
46.00	2.70	0.82	0.00	97.00	2.70	0.82	0.00				
47.00	2.70	0.82	0.00	98.00	2.70	0.82	0.00				
48.00	2.70	0.82	0.00	99.00	2.70	0.82	0.00				
49.00	2.70	0.82	0.00	100.00	2.70	0.82	0.00				
50.00	2.70	0.82	0.00	101.00	2.70	0.82	0.00				
51.00	2.70	0.82	0.00	102.00	2.70	0.82	0.00				

Summary for Subcatchment PDA-2: PDA-2

Initial Mannings on trap swale set at 0.15 pending depth assessment

Runoff = 1.27 cfs @ 12.92 hrs, Volume= 0.432 af, Depth= 1.09"

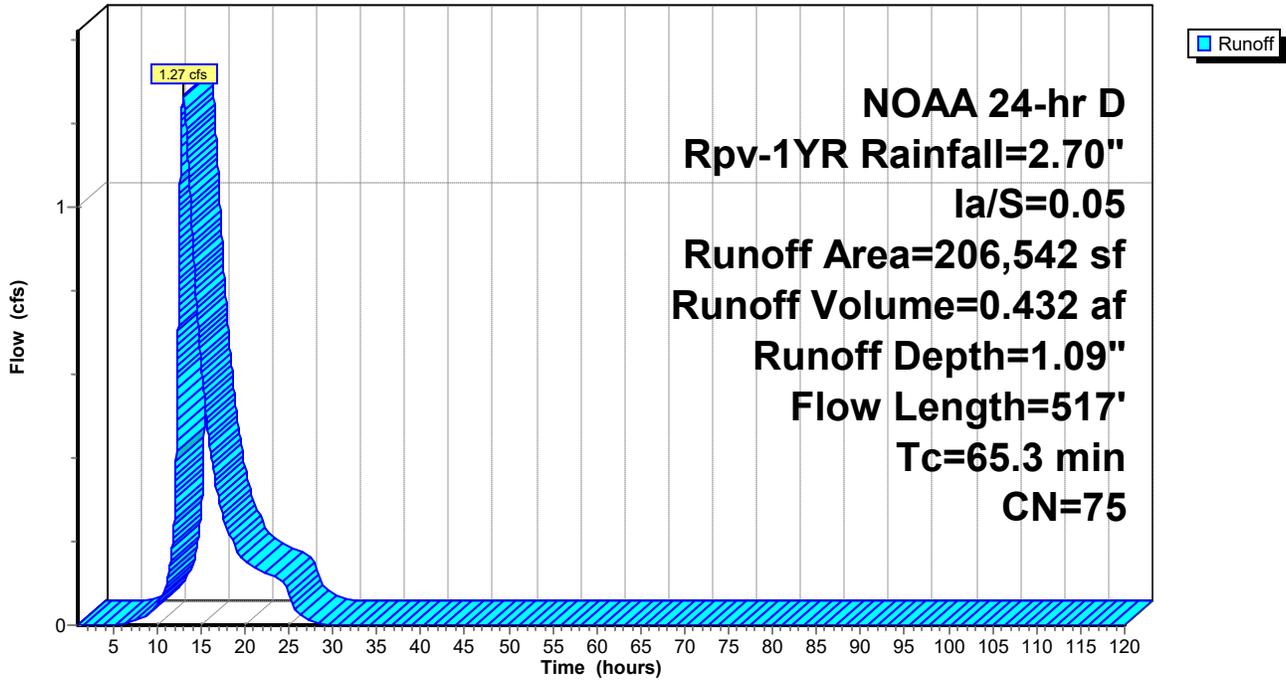
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D Rpv-1YR Rainfall=2.70", Ia/S=0.05

Area (sf)	CN	Description
126,842	61	>75% Grass cover, Good, HSG B
52,641	98	Paved parking, HSG B
27,059	98	Roofs, HSG B
206,542	75	Weighted Average
126,842		61.41% Pervious Area
79,700		38.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.1	100	0.0050	0.07		Sheet Flow, sheet flow Grass: Dense n= 0.240 P2= 3.40"
0.2	22	0.0450	1.48		Shallow Concentrated Flow, SCF-pad shoulder Short Grass Pasture Kv= 7.0 fps
41.0	395	0.0040	0.16	1.61	Channel Flow, OCF-Trap Channel Area= 10.0 sf Perim= 50.0' r= 0.20' n= 0.200
65.3	517	Total			

Subcatchment PDA-2: PDA-2

Hydrograph



Hydrograph for Subcatchment PDA-2: PDA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00	52.00	2.70	1.09	0.00	103.00	2.70	1.09	0.00
2.00	0.06	0.00	0.00	53.00	2.70	1.09	0.00	104.00	2.70	1.09	0.00
3.00	0.10	0.00	0.00	54.00	2.70	1.09	0.00	105.00	2.70	1.09	0.00
4.00	0.14	0.00	0.00	55.00	2.70	1.09	0.00	106.00	2.70	1.09	0.00
5.00	0.18	0.00	0.00	56.00	2.70	1.09	0.00	107.00	2.70	1.09	0.00
6.00	0.23	0.00	0.00	57.00	2.70	1.09	0.00	108.00	2.70	1.09	0.00
7.00	0.28	0.00	0.01	58.00	2.70	1.09	0.00	109.00	2.70	1.09	0.00
8.00	0.35	0.01	0.01	59.00	2.70	1.09	0.00	110.00	2.70	1.09	0.00
9.00	0.43	0.02	0.03	60.00	2.70	1.09	0.00	111.00	2.70	1.09	0.00
10.00	0.54	0.04	0.05	61.00	2.70	1.09	0.00	112.00	2.70	1.09	0.00
11.00	0.70	0.07	0.09	62.00	2.70	1.09	0.00	113.00	2.70	1.09	0.00
12.00	1.29	0.28	0.26	63.00	2.70	1.09	0.00	114.00	2.70	1.09	0.00
13.00	2.00	0.65	1.27	64.00	2.70	1.09	0.00	115.00	2.70	1.09	0.00
14.00	2.16	0.75	0.95	65.00	2.70	1.09	0.00	116.00	2.70	1.09	0.00
15.00	2.27	0.81	0.64	66.00	2.70	1.09	0.00	117.00	2.70	1.09	0.00
16.00	2.35	0.86	0.43	67.00	2.70	1.09	0.00	118.00	2.70	1.09	0.00
17.00	2.42	0.91	0.30	68.00	2.70	1.09	0.00	119.00	2.70	1.09	0.00
18.00	2.47	0.94	0.23	69.00	2.70	1.09	0.00	120.00	2.70	1.09	0.00
19.00	2.52	0.97	0.18	70.00	2.70	1.09	0.00				
20.00	2.56	1.00	0.16	71.00	2.70	1.09	0.00				
21.00	2.60	1.03	0.14	72.00	2.70	1.09	0.00				
22.00	2.64	1.05	0.13	73.00	2.70	1.09	0.00				
23.00	2.67	1.07	0.12	74.00	2.70	1.09	0.00				
24.00	2.70	1.09	0.11	75.00	2.70	1.09	0.00				
25.00	2.70	1.09	0.07	76.00	2.70	1.09	0.00				
26.00	2.70	1.09	0.03	77.00	2.70	1.09	0.00				
27.00	2.70	1.09	0.01	78.00	2.70	1.09	0.00				
28.00	2.70	1.09	0.00	79.00	2.70	1.09	0.00				
29.00	2.70	1.09	0.00	80.00	2.70	1.09	0.00				
30.00	2.70	1.09	0.00	81.00	2.70	1.09	0.00				
31.00	2.70	1.09	0.00	82.00	2.70	1.09	0.00				
32.00	2.70	1.09	0.00	83.00	2.70	1.09	0.00				
33.00	2.70	1.09	0.00	84.00	2.70	1.09	0.00				
34.00	2.70	1.09	0.00	85.00	2.70	1.09	0.00				
35.00	2.70	1.09	0.00	86.00	2.70	1.09	0.00				
36.00	2.70	1.09	0.00	87.00	2.70	1.09	0.00				
37.00	2.70	1.09	0.00	88.00	2.70	1.09	0.00				
38.00	2.70	1.09	0.00	89.00	2.70	1.09	0.00				
39.00	2.70	1.09	0.00	90.00	2.70	1.09	0.00				
40.00	2.70	1.09	0.00	91.00	2.70	1.09	0.00				
41.00	2.70	1.09	0.00	92.00	2.70	1.09	0.00				
42.00	2.70	1.09	0.00	93.00	2.70	1.09	0.00				
43.00	2.70	1.09	0.00	94.00	2.70	1.09	0.00				
44.00	2.70	1.09	0.00	95.00	2.70	1.09	0.00				
45.00	2.70	1.09	0.00	96.00	2.70	1.09	0.00				
46.00	2.70	1.09	0.00	97.00	2.70	1.09	0.00				
47.00	2.70	1.09	0.00	98.00	2.70	1.09	0.00				
48.00	2.70	1.09	0.00	99.00	2.70	1.09	0.00				
49.00	2.70	1.09	0.00	100.00	2.70	1.09	0.00				
50.00	2.70	1.09	0.00	101.00	2.70	1.09	0.00				
51.00	2.70	1.09	0.00	102.00	2.70	1.09	0.00				

Summary for Pond EDB-1: PDA-2 Extended Det. Basin

Inflow Area = 4.742 ac, 38.59% Impervious, Inflow Depth = 1.09" for Rpv-1YR event
 Inflow = 1.27 cfs @ 12.92 hrs, Volume= 0.432 af
 Outflow = 0.45 cfs @ 15.91 hrs, Volume= 0.432 af, Atten= 65%, Lag= 179.3 min
 Primary = 0.45 cfs @ 15.91 hrs, Volume= 0.432 af

Routing by Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 7.88' @ 15.91 hrs Surf.Area= 12,384 sf Storage= 7,871 cf

Plug-Flow detention time= 273.1 min calculated for 0.432 af (100% of inflow)
 Center-of-Mass det. time= 273.2 min (1,207.5 - 934.3)

Volume	Invert	Avail.Storage	Storage Description
#1	7.20'	42,556 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

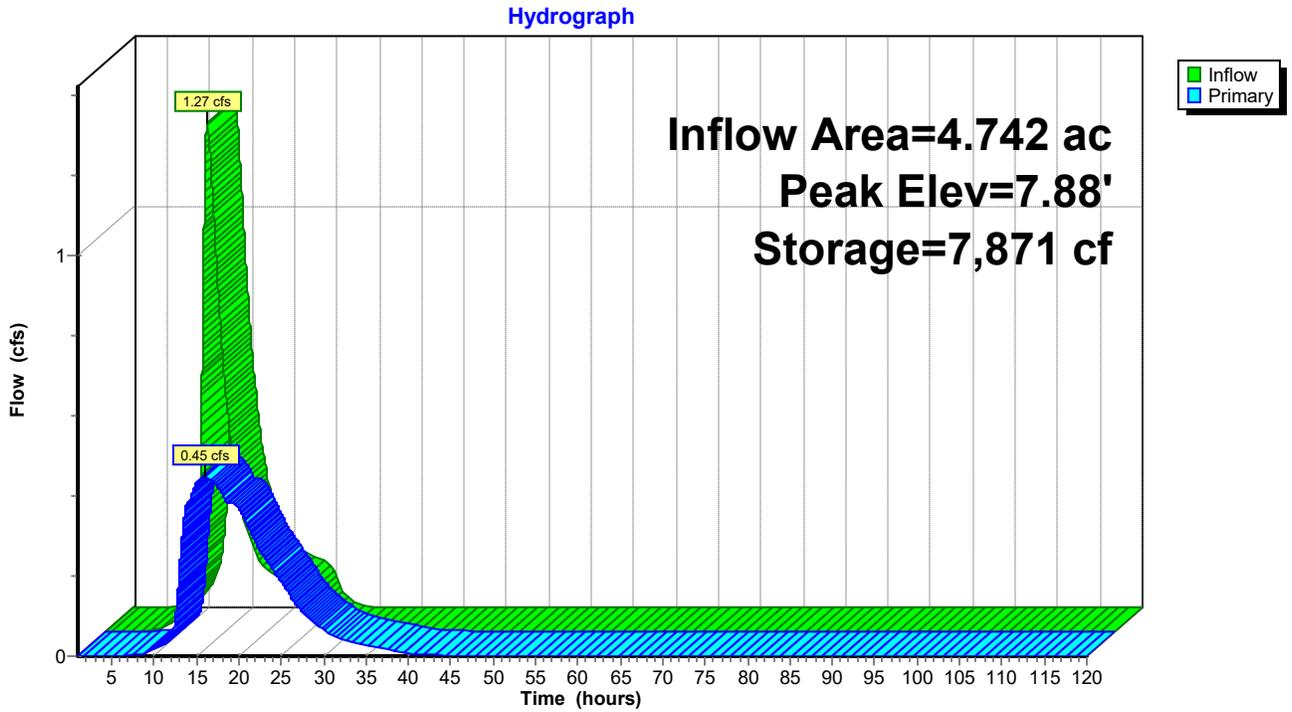
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
7.20	10,724	0	0
8.00	12,674	9,359	9,359
9.00	25,832	19,253	28,612
9.50	29,944	13,944	42,556

Device	Routing	Invert	Outlet Devices
#1	Primary	7.10'	6.0" Round Culvert L= 57.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.10' / 7.00' S= 0.0018 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.20 sf
#2	Primary	8.92'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

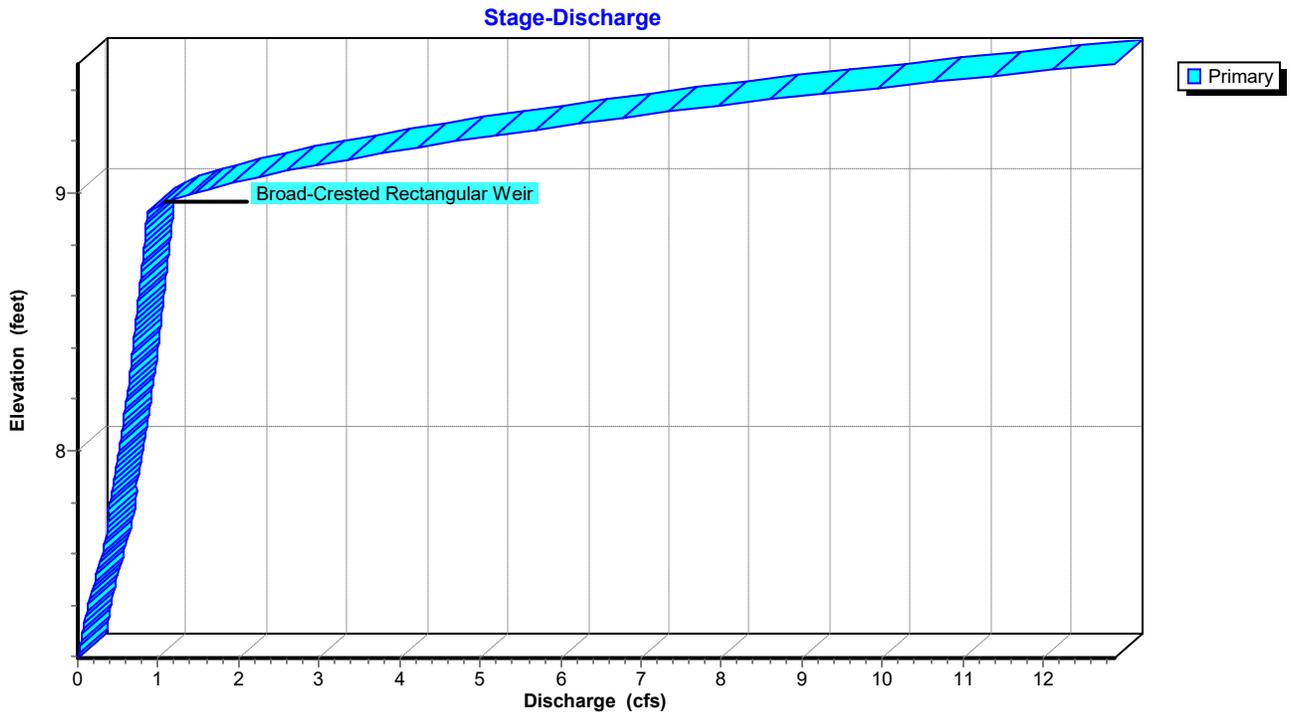
Primary OutFlow Max=0.45 cfs @ 15.91 hrs HW=7.88' (Free Discharge)

- 1=Culvert (Barrel Controls 0.45 cfs @ 2.28 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

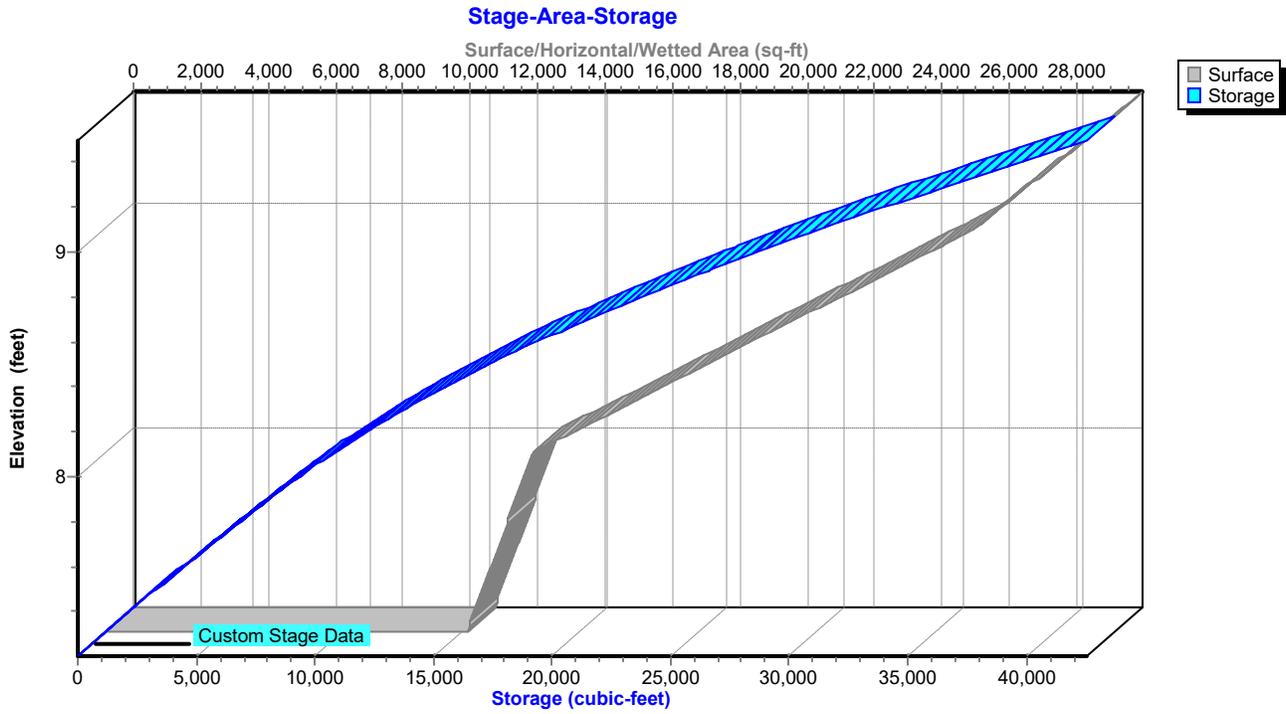
Pond EDB-1: PDA-2 Extended Det. Basin



Pond EDB-1: PDA-2 Extended Det. Basin



Pond EDB-1: PDA-2 Extended Det. Basin



Hydrograph for Pond EDB-1: PDA-2 Extended Det. Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	7.20	0.00	103.00	0.00	0	7.20	0.00
3.00	0.00	0	7.20	0.00	105.00	0.00	0	7.20	0.00
5.00	0.00	0	7.20	0.00	107.00	0.00	0	7.20	0.00
7.00	0.01	13	7.20	0.00	109.00	0.00	0	7.20	0.00
9.00	0.03	92	7.21	0.01	111.00	0.00	0	7.20	0.00
11.00	0.09	346	7.23	0.03	113.00	0.00	0	7.20	0.00
13.00	1.27	3,324	7.50	0.21	115.00	0.00	0	7.20	0.00
15.00	0.64	7,566	7.86	0.43	117.00	0.00	0	7.20	0.00
17.00	0.30	7,583	7.86	0.43	119.00	0.00	0	7.20	0.00
19.00	0.18	6,358	7.76	0.38					
21.00	0.14	4,871	7.63	0.33					
23.00	0.12	3,754	7.54	0.25					
25.00	0.07	2,969	7.47	0.19					
27.00	0.01	2,115	7.39	0.12					
29.00	0.00	1,443	7.33	0.08					
31.00	0.00	978	7.29	0.05					
33.00	0.00	654	7.26	0.04					
35.00	0.00	418	7.24	0.03					
37.00	0.00	240	7.22	0.02					
39.00	0.00	127	7.21	0.01					
41.00	0.00	67	7.21	0.01					
43.00	0.00	35	7.20	0.00					
45.00	0.00	19	7.20	0.00					
47.00	0.00	10	7.20	0.00					
49.00	0.00	5	7.20	0.00					
51.00	0.00	3	7.20	0.00					
53.00	0.00	1	7.20	0.00					
55.00	0.00	1	7.20	0.00					
57.00	0.00	0	7.20	0.00					
59.00	0.00	0	7.20	0.00					
61.00	0.00	0	7.20	0.00					
63.00	0.00	0	7.20	0.00					
65.00	0.00	0	7.20	0.00					
67.00	0.00	0	7.20	0.00					
69.00	0.00	0	7.20	0.00					
71.00	0.00	0	7.20	0.00					
73.00	0.00	0	7.20	0.00					
75.00	0.00	0	7.20	0.00					
77.00	0.00	0	7.20	0.00					
79.00	0.00	0	7.20	0.00					
81.00	0.00	0	7.20	0.00					
83.00	0.00	0	7.20	0.00					
85.00	0.00	0	7.20	0.00					
87.00	0.00	0	7.20	0.00					
89.00	0.00	0	7.20	0.00					
91.00	0.00	0	7.20	0.00					
93.00	0.00	0	7.20	0.00					
95.00	0.00	0	7.20	0.00					
97.00	0.00	0	7.20	0.00					
99.00	0.00	0	7.20	0.00					
101.00	0.00	0	7.20	0.00					

Stage-Discharge for Pond EDB-1: PDA-2 Extended Det. Basin

Elevation (feet)	Primary (cfs)								
7.20	0.00	7.71	0.38	8.22	0.61	8.73	0.80	9.24	5.54
7.21	0.02	7.72	0.38	8.23	0.62	8.74	0.81	9.25	5.77
7.22	0.02	7.73	0.38	8.24	0.62	8.75	0.81	9.26	5.99
7.23	0.02	7.74	0.39	8.25	0.63	8.76	0.81	9.27	6.23
7.24	0.03	7.75	0.39	8.26	0.63	8.77	0.82	9.28	6.47
7.25	0.03	7.76	0.38	8.27	0.64	8.78	0.82	9.29	6.71
7.26	0.04	7.77	0.38	8.28	0.64	8.79	0.82	9.30	6.95
7.27	0.04	7.78	0.38	8.29	0.64	8.80	0.83	9.31	7.20
7.28	0.05	7.79	0.39	8.30	0.65	8.81	0.83	9.32	7.45
7.29	0.05	7.80	0.40	8.31	0.65	8.82	0.83	9.33	7.72
7.30	0.06	7.81	0.40	8.32	0.66	8.83	0.84	9.34	7.99
7.31	0.06	7.82	0.41	8.33	0.66	8.84	0.84	9.35	8.26
7.32	0.07	7.83	0.42	8.34	0.66	8.85	0.84	9.36	8.54
7.33	0.08	7.84	0.42	8.35	0.67	8.86	0.85	9.37	8.82
7.34	0.08	7.85	0.43	8.36	0.67	8.87	0.85	9.38	9.11
7.35	0.09	7.86	0.43	8.37	0.68	8.88	0.85	9.39	9.40
7.36	0.10	7.87	0.44	8.38	0.68	8.89	0.85	9.40	9.70
7.37	0.11	7.88	0.45	8.39	0.68	8.90	0.86	9.41	10.00
7.38	0.11	7.89	0.45	8.40	0.69	8.91	0.86	9.42	10.30
7.39	0.12	7.90	0.46	8.41	0.69	8.92	0.86	9.43	10.61
7.40	0.13	7.91	0.46	8.42	0.70	8.93	0.89	9.44	10.92
7.41	0.14	7.92	0.47	8.43	0.70	8.94	0.94	9.45	11.24
7.42	0.14	7.93	0.48	8.44	0.70	8.95	1.00	9.46	11.56
7.43	0.15	7.94	0.48	8.45	0.71	8.96	1.07	9.47	11.89
7.44	0.16	7.95	0.49	8.46	0.71	8.97	1.16	9.48	12.22
7.45	0.17	7.96	0.49	8.47	0.71	8.98	1.25	9.49	12.55
7.46	0.18	7.97	0.50	8.48	0.72	8.99	1.35	9.50	12.89
7.47	0.19	7.98	0.50	8.49	0.72	9.00	1.45		
7.48	0.20	7.99	0.51	8.50	0.72	9.01	1.56		
7.49	0.20	8.00	0.51	8.51	0.73	9.02	1.68		
7.50	0.21	8.01	0.52	8.52	0.73	9.03	1.80		
7.51	0.22	8.02	0.52	8.53	0.74	9.04	1.93		
7.52	0.23	8.03	0.53	8.54	0.74	9.05	2.07		
7.53	0.24	8.04	0.53	8.55	0.74	9.06	2.21		
7.54	0.25	8.05	0.54	8.56	0.75	9.07	2.35		
7.55	0.26	8.06	0.54	8.57	0.75	9.08	2.50		
7.56	0.27	8.07	0.55	8.58	0.75	9.09	2.66		
7.57	0.27	8.08	0.55	8.59	0.76	9.10	2.82		
7.58	0.28	8.09	0.56	8.60	0.76	9.11	2.98		
7.59	0.29	8.10	0.56	8.61	0.76	9.12	3.15		
7.60	0.30	8.11	0.57	8.62	0.77	9.13	3.32		
7.61	0.31	8.12	0.57	8.63	0.77	9.14	3.50		
7.62	0.32	8.13	0.58	8.64	0.77	9.15	3.69		
7.63	0.32	8.14	0.58	8.65	0.78	9.16	3.88		
7.64	0.33	8.15	0.58	8.66	0.78	9.17	4.07		
7.65	0.34	8.16	0.59	8.67	0.78	9.18	4.27		
7.66	0.35	8.17	0.59	8.68	0.79	9.19	4.47		
7.67	0.35	8.18	0.60	8.69	0.79	9.20	4.68		
7.68	0.36	8.19	0.60	8.70	0.79	9.21	4.89		
7.69	0.37	8.20	0.61	8.71	0.80	9.22	5.10		
7.70	0.37	8.21	0.61	8.72	0.80	9.23	5.32		

Stage-Area-Storage for Pond EDB-1: PDA-2 Extended Det. Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
7.20	10,724	0
7.25	10,846	539
7.30	10,968	1,085
7.35	11,090	1,636
7.40	11,212	2,194
7.45	11,333	2,757
7.50	11,455	3,327
7.55	11,577	3,903
7.60	11,699	4,485
7.65	11,821	5,073
7.70	11,943	5,667
7.75	12,065	6,267
7.80	12,187	6,873
7.85	12,308	7,486
7.90	12,430	8,104
7.95	12,552	8,729
8.00	12,674	9,359
8.05	13,332	10,009
8.10	13,990	10,692
8.15	14,648	11,408
8.20	15,306	12,157
8.25	15,964	12,939
8.30	16,621	13,754
8.35	17,279	14,601
8.40	17,937	15,481
8.45	18,595	16,395
8.50	19,253	17,341
8.55	19,911	18,320
8.60	20,569	19,332
8.65	21,227	20,377
8.70	21,885	21,455
8.75	22,543	22,565
8.80	23,200	23,709
8.85	23,858	24,885
8.90	24,516	26,095
8.95	25,174	27,337
9.00	25,832	28,612
9.05	26,243	29,914
9.10	26,654	31,237
9.15	27,066	32,580
9.20	27,477	33,943
9.25	27,888	35,327
9.30	28,299	36,732
9.35	28,710	38,157
9.40	29,122	39,603
9.45	29,533	41,069
9.50	29,944	42,556

Summary for Pond FB-1: Forebay-1

Inflow Area = 8.831 ac, 56.74% Impervious, Inflow Depth = 1.39" for Rpv-1YR event
 Inflow = 11.37 cfs @ 12.14 hrs, Volume= 1.024 af
 Outflow = 8.96 cfs @ 12.22 hrs, Volume= 1.023 af, Atten= 21%, Lag= 4.8 min
 Primary = 8.96 cfs @ 12.22 hrs, Volume= 1.023 af

Routing by Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 5.78' @ 12.22 hrs Surf.Area= 11,000 sf Storage= 9,501 cf

Plug-Flow detention time= 92.9 min calculated for 1.023 af (100% of inflow)
 Center-of-Mass det. time= 92.9 min (920.4 - 827.5)

Volume	Invert	Avail.Storage	Storage Description
#1	4.80'	18,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.80	6,640	0	0
5.00	9,288	1,593	1,593
5.50	10,318	4,902	6,494
6.00	11,527	5,461	11,956
6.50	13,670	6,299	18,255

Device	Routing	Invert	Outlet Devices
#1	Primary	4.80'	18.0" Round Culvert X 2.00 L= 85.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.80' / 4.50' S= 0.0035 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	5.55'	30.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

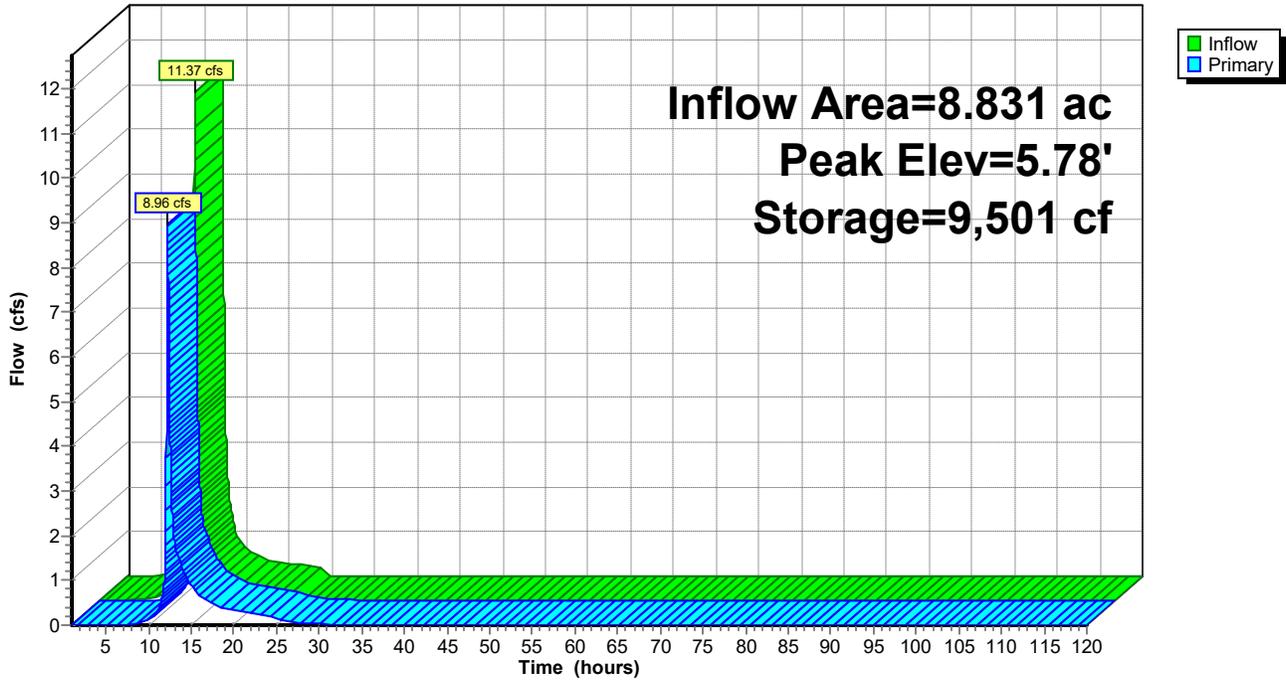
Primary OutFlow Max=8.96 cfs @ 12.22 hrs HW=5.78' TW=5.68' (TW follows 0.10' below HW)

1=Culvert (Outlet Controls 2.50 cfs @ 1.45 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 6.46 cfs @ 0.93 fps)

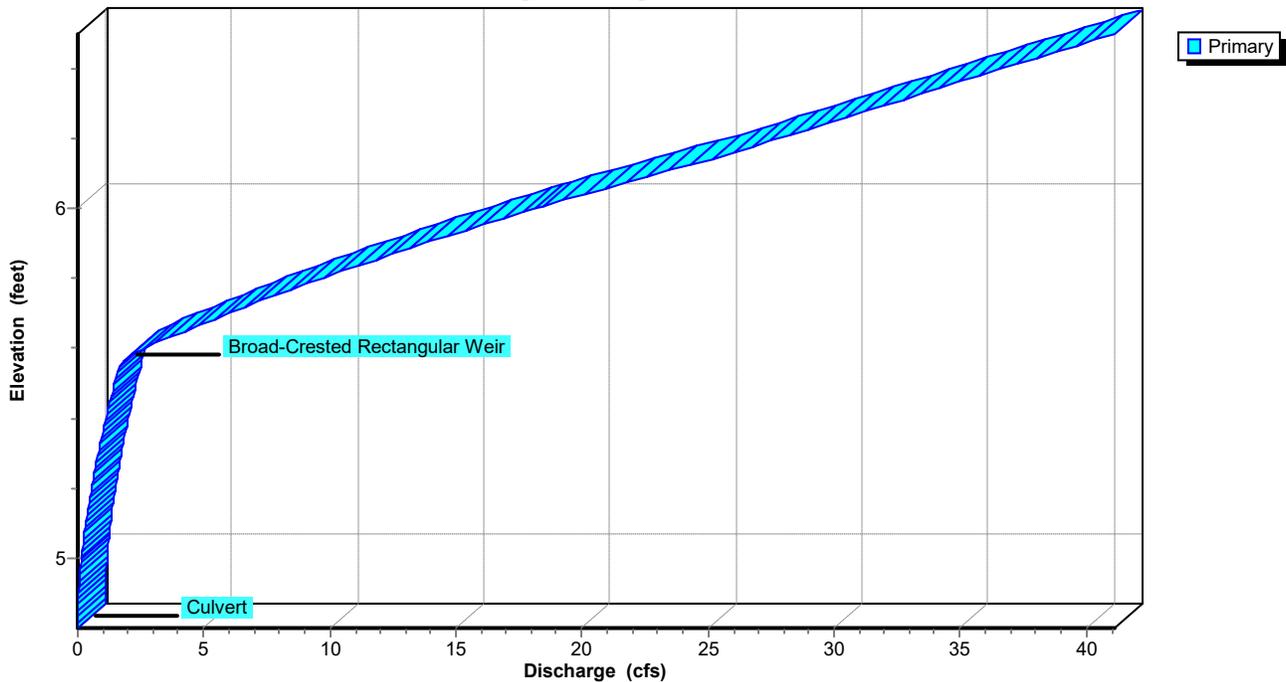
Pond FB-1: Forebay-1

Hydrograph

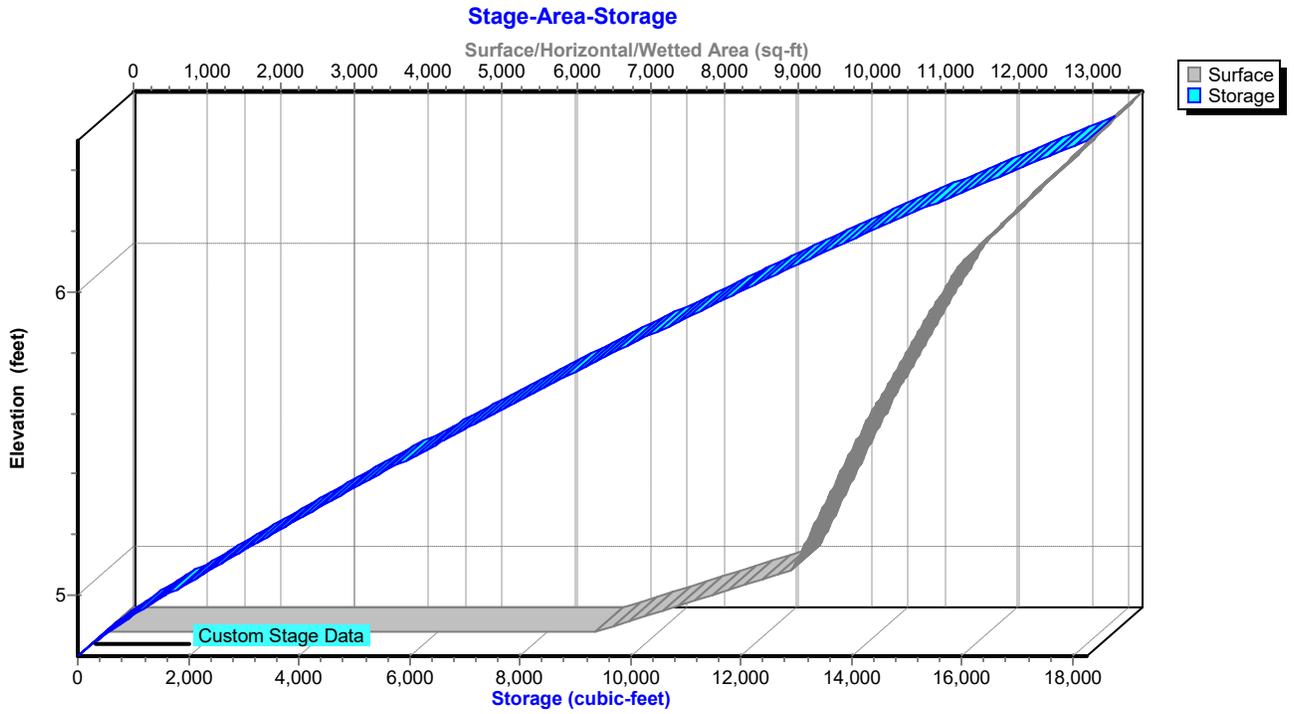


Pond FB-1: Forebay-1

Stage-Discharge



Pond FB-1: Forebay-1



Hydrograph for Pond FB-1: Forebay-1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.80	0.00	103.00	0.00	41	4.81	0.00
3.00	0.00	0	4.80	0.00	105.00	0.00	39	4.81	0.00
5.00	0.02	65	4.81	0.00	107.00	0.00	37	4.81	0.00
7.00	0.07	350	4.85	0.01	109.00	0.00	35	4.81	0.00
9.00	0.17	975	4.93	0.06	111.00	0.00	34	4.80	0.00
11.00	0.69	2,417	5.09	0.29	113.00	0.00	32	4.80	0.00
13.00	1.72	7,258	5.57	1.98	115.00	0.00	31	4.80	0.00
15.00	0.60	4,734	5.33	0.89	117.00	0.00	29	4.80	0.00
17.00	0.41	3,443	5.19	0.53	119.00	0.00	28	4.80	0.00
19.00	0.31	2,782	5.13	0.37					
21.00	0.27	2,477	5.09	0.30					
23.00	0.23	2,263	5.07	0.26					
25.00	0.00	1,583	5.00	0.14					
27.00	0.00	948	4.93	0.06					
29.00	0.00	664	4.89	0.03					
31.00	0.00	508	4.87	0.02					
33.00	0.00	411	4.86	0.01					
35.00	0.00	345	4.85	0.01					
37.00	0.00	297	4.84	0.01					
39.00	0.00	260	4.84	0.00					
41.00	0.00	233	4.83	0.00					
43.00	0.00	210	4.83	0.00					
45.00	0.00	191	4.83	0.00					
47.00	0.00	175	4.83	0.00					
49.00	0.00	161	4.82	0.00					
51.00	0.00	149	4.82	0.00					
53.00	0.00	139	4.82	0.00					
55.00	0.00	130	4.82	0.00					
57.00	0.00	123	4.82	0.00					
59.00	0.00	117	4.82	0.00					
61.00	0.00	111	4.82	0.00					
63.00	0.00	106	4.82	0.00					
65.00	0.00	101	4.81	0.00					
67.00	0.00	96	4.81	0.00					
69.00	0.00	92	4.81	0.00					
71.00	0.00	88	4.81	0.00					
73.00	0.00	84	4.81	0.00					
75.00	0.00	80	4.81	0.00					
77.00	0.00	76	4.81	0.00					
79.00	0.00	72	4.81	0.00					
81.00	0.00	69	4.81	0.00					
83.00	0.00	66	4.81	0.00					
85.00	0.00	63	4.81	0.00					
87.00	0.00	60	4.81	0.00					
89.00	0.00	57	4.81	0.00					
91.00	0.00	54	4.81	0.00					
93.00	0.00	52	4.81	0.00					
95.00	0.00	49	4.81	0.00					
97.00	0.00	47	4.81	0.00					
99.00	0.00	45	4.81	0.00					
101.00	0.00	43	4.81	0.00					

Stage-Discharge for Pond FB-1: Forebay-1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
4.80	0.00	5.31	0.84	5.82	10.44	6.33	33.48
4.81	0.00	5.32	0.87	5.83	10.84	6.34	33.92
4.82	0.00	5.33	0.90	5.84	11.24	6.35	34.36
4.83	0.00	5.34	0.93	5.85	11.64	6.36	34.81
4.84	0.00	5.35	0.96	5.86	12.05	6.37	35.26
4.85	0.01	5.36	0.99	5.87	12.46	6.38	35.72
4.86	0.01	5.37	1.02	5.88	12.88	6.39	36.17
4.87	0.02	5.38	1.06	5.89	13.29	6.40	36.62
4.88	0.02	5.39	1.09	5.90	13.71	6.41	37.07
4.89	0.03	5.40	1.12	5.91	14.14	6.42	37.52
4.90	0.03	5.41	1.15	5.92	14.56	6.43	37.97
4.91	0.04	5.42	1.19	5.93	14.99	6.44	38.43
4.92	0.05	5.43	1.22	5.94	15.43	6.45	38.88
4.93	0.06	5.44	1.25	5.95	15.86	6.46	39.33
4.94	0.07	5.45	1.29	5.96	16.31	6.47	39.78
4.95	0.08	5.46	1.32	5.97	16.77	6.48	40.24
4.96	0.09	5.47	1.35	5.98	17.23	6.49	40.69
4.97	0.10	5.48	1.39	5.99	17.69	6.50	41.14
4.98	0.11	5.49	1.42	6.00	18.16		
4.99	0.13	5.50	1.46	6.01	18.63		
5.00	0.14	5.51	1.49	6.02	19.10		
5.01	0.15	5.52	1.53	6.03	19.58		
5.02	0.17	5.53	1.56	6.04	20.06		
5.03	0.18	5.54	1.60	6.05	20.54		
5.04	0.20	5.55	1.63	6.06	21.03		
5.05	0.22	5.56	1.74	6.07	21.52		
5.06	0.24	5.57	1.91	6.08	22.02		
5.07	0.25	5.58	2.11	6.09	22.52		
5.08	0.27	5.59	2.35	6.10	23.02		
5.09	0.29	5.60	2.61	6.11	23.52		
5.10	0.31	5.61	2.90	6.12	24.03		
5.11	0.33	5.62	3.20	6.13	24.55		
5.12	0.35	5.63	3.53	6.14	25.06		
5.13	0.37	5.64	3.88	6.15	25.58		
5.14	0.40	5.65	4.25	6.16	26.02		
5.15	0.42	5.66	4.60	6.17	26.46		
5.16	0.44	5.67	4.95	6.18	26.90		
5.17	0.47	5.68	5.30	6.19	27.33		
5.18	0.49	5.69	5.64	6.20	27.77		
5.19	0.51	5.70	5.99	6.21	28.21		
5.20	0.54	5.71	6.34	6.22	28.65		
5.21	0.56	5.72	6.69	6.23	29.09		
5.22	0.59	5.73	7.04	6.24	29.53		
5.23	0.62	5.74	7.40	6.25	29.97		
5.24	0.64	5.75	7.75	6.26	30.41		
5.25	0.67	5.76	8.13	6.27	30.85		
5.26	0.70	5.77	8.50	6.28	31.29		
5.27	0.73	5.78	8.88	6.29	31.72		
5.28	0.75	5.79	9.27	6.30	32.16		
5.29	0.78	5.80	9.66	6.31	32.60		
5.30	0.81	5.81	10.05	6.32	33.04		

Stage-Area-Storage for Pond FB-1: Forebay-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.80	6,640	0	5.82	11,092	9,920
4.82	6,905	135	5.84	11,140	10,142
4.84	7,170	276	5.86	11,188	10,365
4.86	7,434	422	5.88	11,237	10,590
4.88	7,699	574	5.90	11,285	10,815
4.90	7,964	730	5.92	11,334	11,041
4.92	8,229	892	5.94	11,382	11,268
4.94	8,494	1,059	5.96	11,430	11,496
4.96	8,758	1,232	5.98	11,479	11,725
4.98	9,023	1,410	6.00	11,527	11,956
5.00	9,288	1,593	6.02	11,613	12,187
5.02	9,329	1,779	6.04	11,698	12,420
5.04	9,370	1,966	6.06	11,784	12,655
5.06	9,412	2,154	6.08	11,870	12,891
5.08	9,453	2,342	6.10	11,956	13,130
5.10	9,494	2,532	6.12	12,041	13,370
5.12	9,535	2,722	6.14	12,127	13,611
5.14	9,576	2,913	6.16	12,213	13,855
5.16	9,618	3,105	6.18	12,298	14,100
5.18	9,659	3,298	6.20	12,384	14,347
5.20	9,700	3,492	6.22	12,470	14,595
5.22	9,741	3,686	6.24	12,556	14,845
5.24	9,782	3,881	6.26	12,641	15,097
5.26	9,824	4,077	6.28	12,727	15,351
5.28	9,865	4,274	6.30	12,813	15,607
5.30	9,906	4,472	6.32	12,899	15,864
5.32	9,947	4,670	6.34	12,984	16,122
5.34	9,988	4,870	6.36	13,070	16,383
5.36	10,030	5,070	6.38	13,156	16,645
5.38	10,071	5,271	6.40	13,241	16,909
5.40	10,112	5,473	6.42	13,327	17,175
5.42	10,153	5,675	6.44	13,413	17,442
5.44	10,194	5,879	6.46	13,499	17,711
5.46	10,236	6,083	6.48	13,584	17,982
5.48	10,277	6,288	6.50	13,670	18,255
5.50	10,318	6,494			
5.52	10,366	6,701			
5.54	10,415	6,909			
5.56	10,463	7,118			
5.58	10,511	7,327			
5.60	10,560	7,538			
5.62	10,608	7,750			
5.64	10,657	7,963			
5.66	10,705	8,176			
5.68	10,753	8,391			
5.70	10,802	8,606			
5.72	10,850	8,823			
5.74	10,898	9,040			
5.76	10,947	9,259			
5.78	10,995	9,478			
5.80	11,043	9,699			

Summary for Pond FB-2: Forebay 2

Inflow Area = 2.146 ac, 55.72% Impervious, Inflow Depth = 1.45" for Rpv-1YR event
 Inflow = 3.05 cfs @ 12.13 hrs, Volume= 0.260 af
 Outflow = 1.79 cfs @ 12.26 hrs, Volume= 0.260 af, Atten= 41%, Lag= 8.0 min
 Primary = 1.79 cfs @ 12.26 hrs, Volume= 0.260 af

Routing by Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 5.71' @ 12.26 hrs Surf.Area= 3,882 sf Storage= 3,027 cf

Plug-Flow detention time= 94.5 min calculated for 0.260 af (100% of inflow)
 Center-of-Mass det. time= 94.3 min (918.2 - 823.9)

Volume	Invert	Avail.Storage	Storage Description
#1	4.80'	6,452 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.80	2,476	0	0
5.00	3,049	553	553
5.50	3,625	1,669	2,221
6.00	4,222	1,962	4,183
6.50	4,854	2,269	6,452

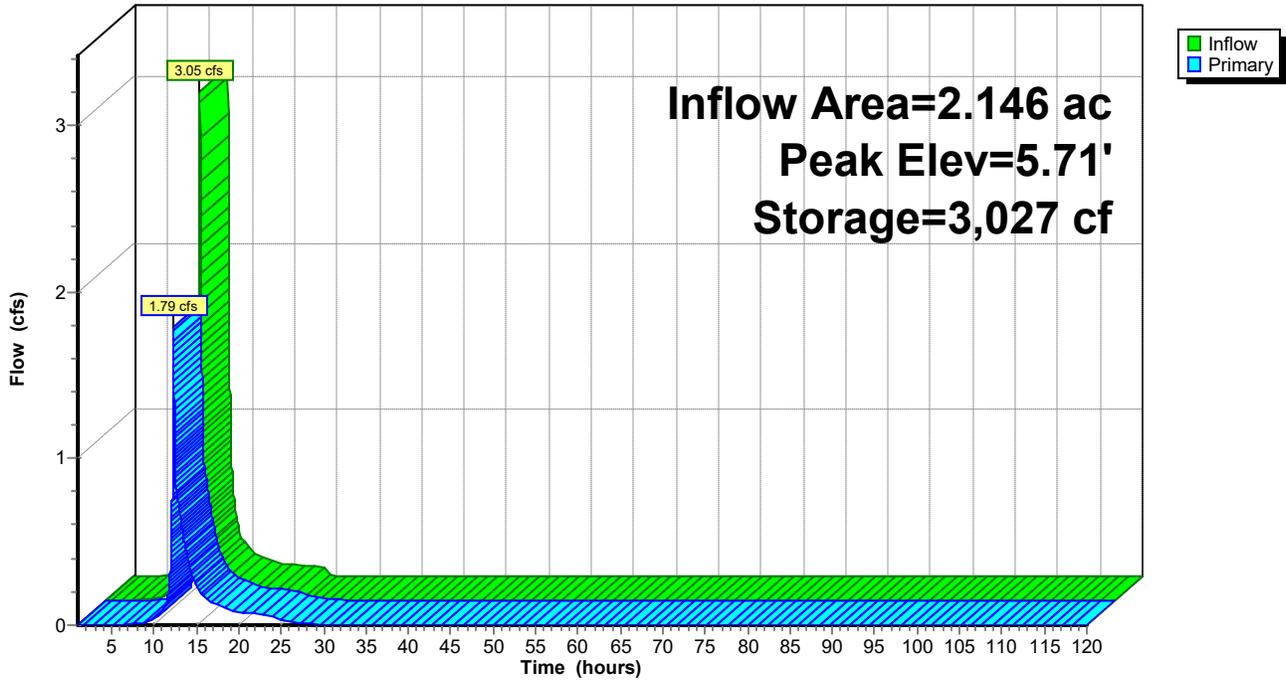
Device	Routing	Invert	Outlet Devices
#1	Primary	4.80'	12.0" Round Culvert L= 48.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.80' / 4.50' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	5.65'	23.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=1.78 cfs @ 12.26 hrs HW=5.71' TW=5.61' (TW follows 0.10' below HW)

- 1=Culvert (Outlet Controls 0.89 cfs @ 1.54 fps)
- 2=Broad-Crested Rectangular Weir (Weir Controls 0.90 cfs @ 0.60 fps)

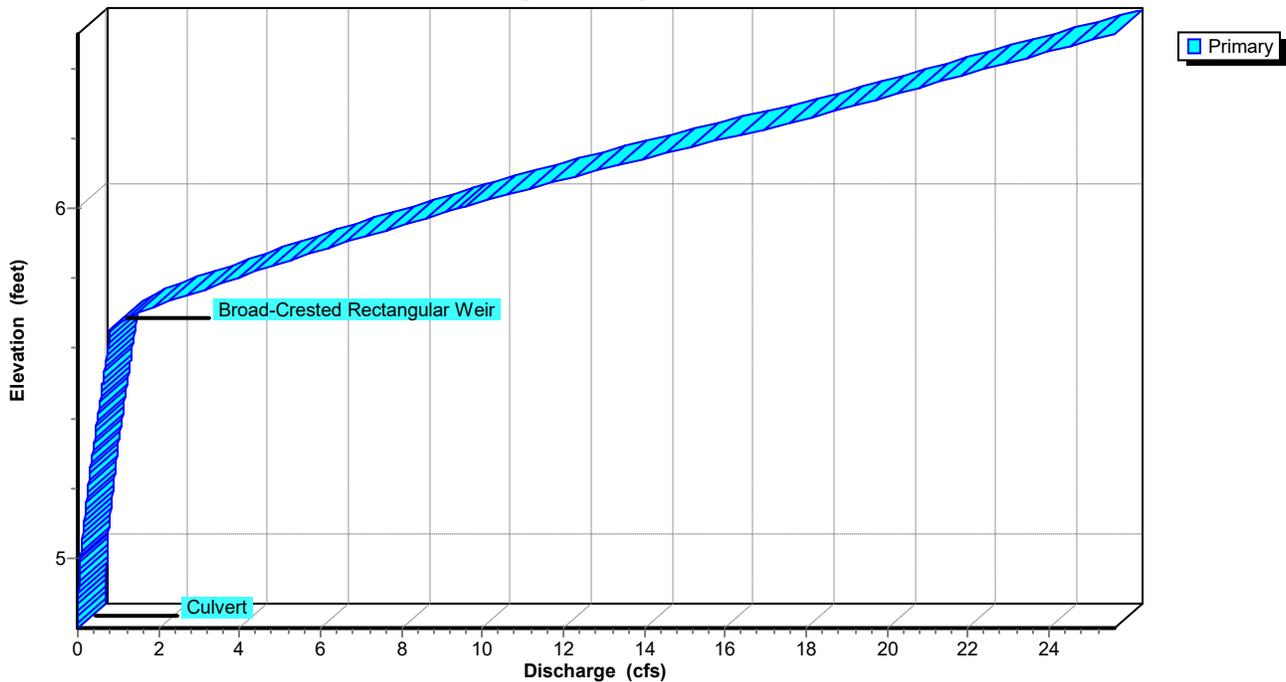
Pond FB-2: Forebay 2

Hydrograph

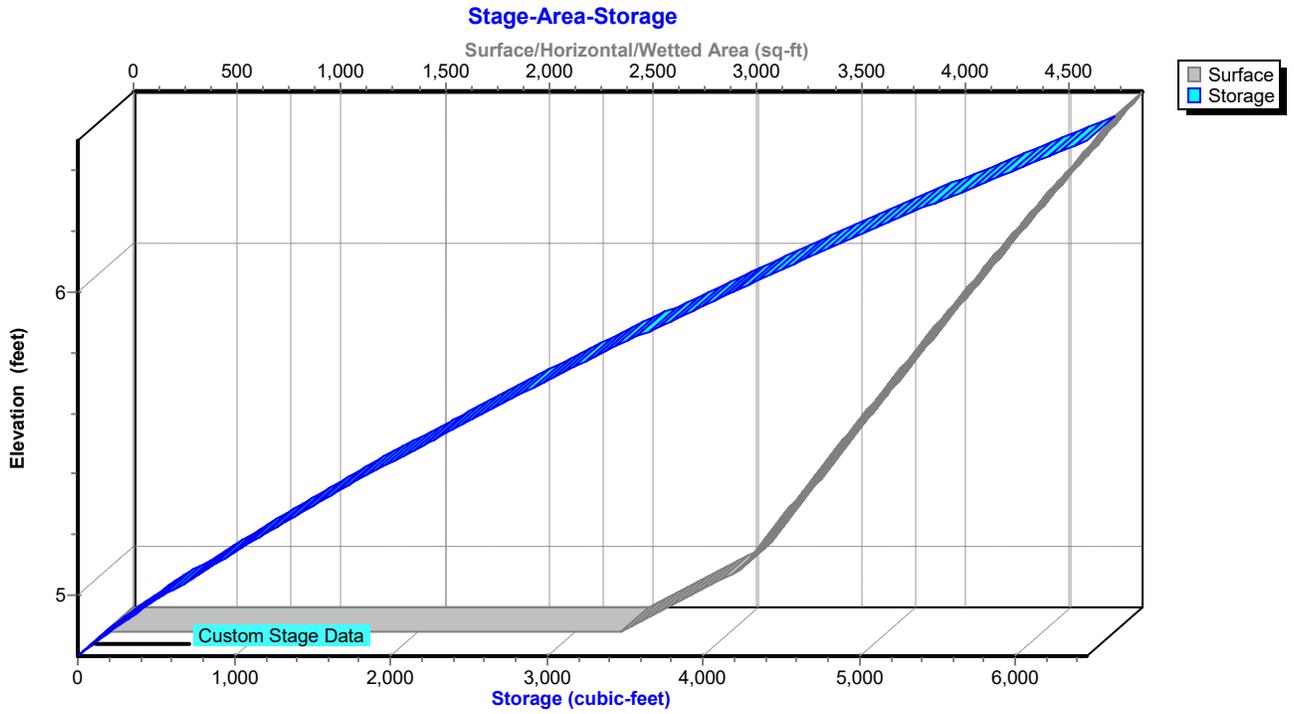


Pond FB-2: Forebay 2

Stage-Discharge



Pond FB-2: Forebay 2



Hydrograph for Pond FB-2: Forebay 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.80	0.00	103.00	0.00	6	4.80	0.00
3.00	0.00	0	4.80	0.00	105.00	0.00	6	4.80	0.00
5.00	0.01	21	4.81	0.00	107.00	0.00	5	4.80	0.00
7.00	0.02	100	4.84	0.00	109.00	0.00	5	4.80	0.00
9.00	0.04	261	4.90	0.02	111.00	0.00	5	4.80	0.00
11.00	0.18	612	5.02	0.08	113.00	0.00	4	4.80	0.00
13.00	0.43	2,455	5.56	0.70	115.00	0.00	4	4.80	0.00
15.00	0.15	1,147	5.19	0.24	117.00	0.00	4	4.80	0.00
17.00	0.10	794	5.08	0.13	119.00	0.00	3	4.80	0.00
19.00	0.08	638	5.03	0.09					
21.00	0.07	570	5.01	0.07					
23.00	0.06	522	4.99	0.06					
25.00	0.00	359	4.93	0.03					
27.00	0.00	216	4.88	0.01					
29.00	0.00	154	4.86	0.01					
31.00	0.00	120	4.85	0.00					
33.00	0.00	98	4.84	0.00					
35.00	0.00	83	4.83	0.00					
37.00	0.00	72	4.83	0.00					
39.00	0.00	63	4.83	0.00					
41.00	0.00	56	4.82	0.00					
43.00	0.00	51	4.82	0.00					
45.00	0.00	46	4.82	0.00					
47.00	0.00	43	4.82	0.00					
49.00	0.00	40	4.82	0.00					
51.00	0.00	37	4.81	0.00					
53.00	0.00	35	4.81	0.00					
55.00	0.00	32	4.81	0.00					
57.00	0.00	30	4.81	0.00					
59.00	0.00	28	4.81	0.00					
61.00	0.00	26	4.81	0.00					
63.00	0.00	25	4.81	0.00					
65.00	0.00	23	4.81	0.00					
67.00	0.00	21	4.81	0.00					
69.00	0.00	20	4.81	0.00					
71.00	0.00	19	4.81	0.00					
73.00	0.00	17	4.81	0.00					
75.00	0.00	16	4.81	0.00					
77.00	0.00	15	4.81	0.00					
79.00	0.00	14	4.81	0.00					
81.00	0.00	13	4.81	0.00					
83.00	0.00	12	4.80	0.00					
85.00	0.00	11	4.80	0.00					
87.00	0.00	11	4.80	0.00					
89.00	0.00	10	4.80	0.00					
91.00	0.00	9	4.80	0.00					
93.00	0.00	9	4.80	0.00					
95.00	0.00	8	4.80	0.00					
97.00	0.00	8	4.80	0.00					
99.00	0.00	7	4.80	0.00					
101.00	0.00	7	4.80	0.00					

Stage-Discharge for Pond FB-2: Forebay 2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
4.80	0.00	5.31	0.38	5.82	4.40	6.33	20.27
4.81	0.00	5.32	0.39	5.83	4.65	6.34	20.58
4.82	0.00	5.33	0.40	5.84	4.90	6.35	20.89
4.83	0.00	5.34	0.41	5.85	5.15	6.36	21.20
4.84	0.00	5.35	0.43	5.86	5.42	6.37	21.51
4.85	0.00	5.36	0.44	5.87	5.69	6.38	21.82
4.86	0.01	5.37	0.45	5.88	5.96	6.39	22.14
4.87	0.01	5.38	0.46	5.89	6.24	6.40	22.45
4.88	0.01	5.39	0.48	5.90	6.51	6.41	22.76
4.89	0.01	5.40	0.49	5.91	6.79	6.42	23.07
4.90	0.02	5.41	0.50	5.92	7.07	6.43	23.39
4.91	0.02	5.42	0.52	5.93	7.36	6.44	23.70
4.92	0.03	5.43	0.53	5.94	7.64	6.45	24.01
4.93	0.03	5.44	0.54	5.95	7.93	6.46	24.34
4.94	0.03	5.45	0.55	5.96	8.22	6.47	24.66
4.95	0.04	5.46	0.57	5.97	8.52	6.48	24.98
4.96	0.05	5.47	0.58	5.98	8.81	6.49	25.31
4.97	0.05	5.48	0.59	5.99	9.11	6.50	25.63
4.98	0.06	5.49	0.60	6.00	9.41		
4.99	0.06	5.50	0.62	6.01	9.71		
5.00	0.07	5.51	0.63	6.02	10.01		
5.01	0.08	5.52	0.64	6.03	10.31		
5.02	0.08	5.53	0.66	6.04	10.62		
5.03	0.09	5.54	0.67	6.05	10.93		
5.04	0.10	5.55	0.68	6.06	11.25		
5.05	0.11	5.56	0.69	6.07	11.57		
5.06	0.12	5.57	0.71	6.08	11.89		
5.07	0.12	5.58	0.72	6.09	12.22		
5.08	0.13	5.59	0.73	6.10	12.55		
5.09	0.14	5.60	0.74	6.11	12.88		
5.10	0.15	5.61	0.76	6.12	13.21		
5.11	0.16	5.62	0.77	6.13	13.53		
5.12	0.17	5.63	0.78	6.14	13.86		
5.13	0.18	5.64	0.79	6.15	14.20		
5.14	0.19	5.65	0.81	6.16	14.55		
5.15	0.20	5.66	0.87	6.17	14.90		
5.16	0.21	5.67	0.99	6.18	15.25		
5.17	0.22	5.68	1.13	6.19	15.61		
5.18	0.23	5.69	1.29	6.20	15.96		
5.19	0.24	5.70	1.48	6.21	16.32		
5.20	0.25	5.71	1.68	6.22	16.69		
5.21	0.26	5.72	1.90	6.23	17.05		
5.22	0.27	5.73	2.14	6.24	17.42		
5.23	0.28	5.74	2.39	6.25	17.79		
5.24	0.30	5.75	2.65	6.26	18.10		
5.25	0.31	5.76	2.90	6.27	18.41		
5.26	0.32	5.77	3.15	6.28	18.72		
5.27	0.33	5.78	3.40	6.29	19.03		
5.28	0.34	5.79	3.65	6.30	19.34		
5.29	0.35	5.80	3.90	6.31	19.65		
5.30	0.37	5.81	4.15	6.32	19.96		

Stage-Area-Storage for Pond FB-2: Forebay 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.80	2,476	0	5.82	4,007	3,442
4.82	2,533	50	5.84	4,031	3,523
4.84	2,591	101	5.86	4,055	3,603
4.86	2,648	154	5.88	4,079	3,685
4.88	2,705	207	5.90	4,103	3,767
4.90	2,762	262	5.92	4,126	3,849
4.92	2,820	318	5.94	4,150	3,932
4.94	2,877	375	5.96	4,174	4,015
4.96	2,934	433	5.98	4,198	4,099
4.98	2,992	492	6.00	4,222	4,183
5.00	3,049	553	6.02	4,247	4,267
5.02	3,072	614	6.04	4,273	4,353
5.04	3,095	675	6.06	4,298	4,438
5.06	3,118	738	6.08	4,323	4,525
5.08	3,141	800	6.10	4,348	4,611
5.10	3,164	863	6.12	4,374	4,698
5.12	3,187	927	6.14	4,399	4,786
5.14	3,210	991	6.16	4,424	4,874
5.16	3,233	1,055	6.18	4,450	4,963
5.18	3,256	1,120	6.20	4,475	5,052
5.20	3,279	1,185	6.22	4,500	5,142
5.22	3,302	1,251	6.24	4,525	5,232
5.24	3,325	1,317	6.26	4,551	5,323
5.26	3,349	1,384	6.28	4,576	5,414
5.28	3,372	1,451	6.30	4,601	5,506
5.30	3,395	1,519	6.32	4,626	5,599
5.32	3,418	1,587	6.34	4,652	5,691
5.34	3,441	1,656	6.36	4,677	5,785
5.36	3,464	1,725	6.38	4,702	5,878
5.38	3,487	1,794	6.40	4,728	5,973
5.40	3,510	1,864	6.42	4,753	6,067
5.42	3,533	1,935	6.44	4,778	6,163
5.44	3,556	2,006	6.46	4,803	6,259
5.46	3,579	2,077	6.48	4,829	6,355
5.48	3,602	2,149	6.50	4,854	6,452
5.50	3,625	2,221			
5.52	3,649	2,294			
5.54	3,673	2,367			
5.56	3,697	2,441			
5.58	3,721	2,515			
5.60	3,744	2,589			
5.62	3,768	2,665			
5.64	3,792	2,740			
5.66	3,816	2,816			
5.68	3,840	2,893			
5.70	3,864	2,970			
5.72	3,888	3,047			
5.74	3,912	3,125			
5.76	3,935	3,204			
5.78	3,959	3,283			
5.80	3,983	3,362			

Summary for Pond LS: Level Spreader 1 NPDES Outfall 2

Inflow Area = 6.001 ac, 37.57% Impervious, Inflow Depth = 0.82" for Rpv-1YR event
 Inflow = 1.11 cfs @ 13.08 hrs, Volume= 0.408 af
 Outflow = 1.11 cfs @ 13.08 hrs, Volume= 0.408 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.11 cfs @ 13.08 hrs, Volume= 0.408 af

Routing by Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 5.43' @ 13.08 hrs

Flood Elev= 11.00'

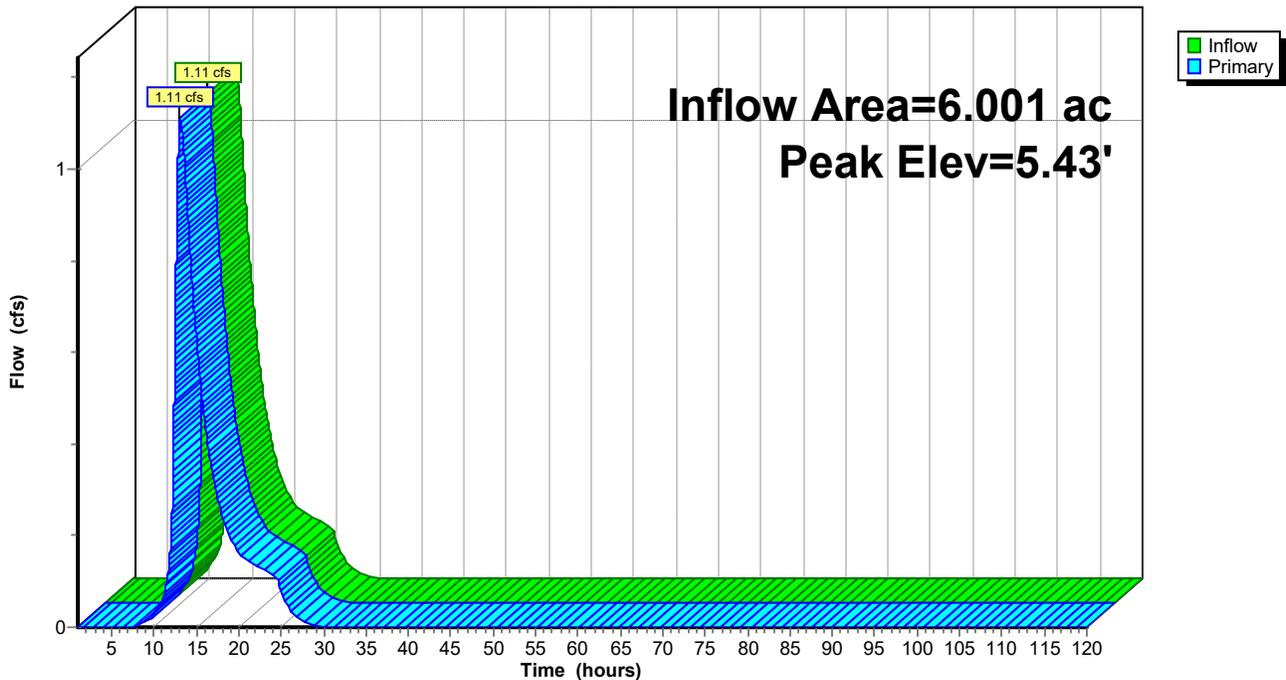
Device	Routing	Invert	Outlet Devices
#1	Primary	5.40'	45.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.84 cfs @ 13.08 hrs HW=5.43' (Free Discharge)

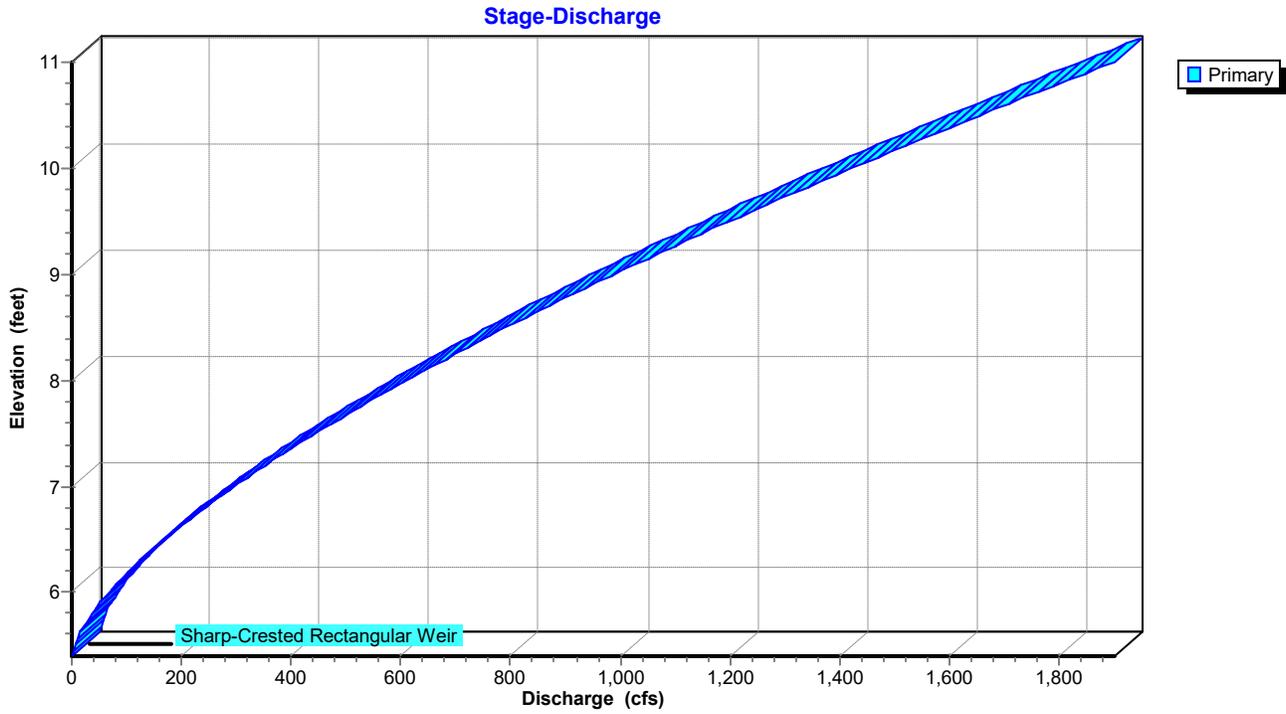
↳1=Sharp-Crested Rectangular Weir (Weir Controls 0.84 cfs @ 0.58 fps)

Pond LS: Level Spreader 1 NPDES Outfall 2

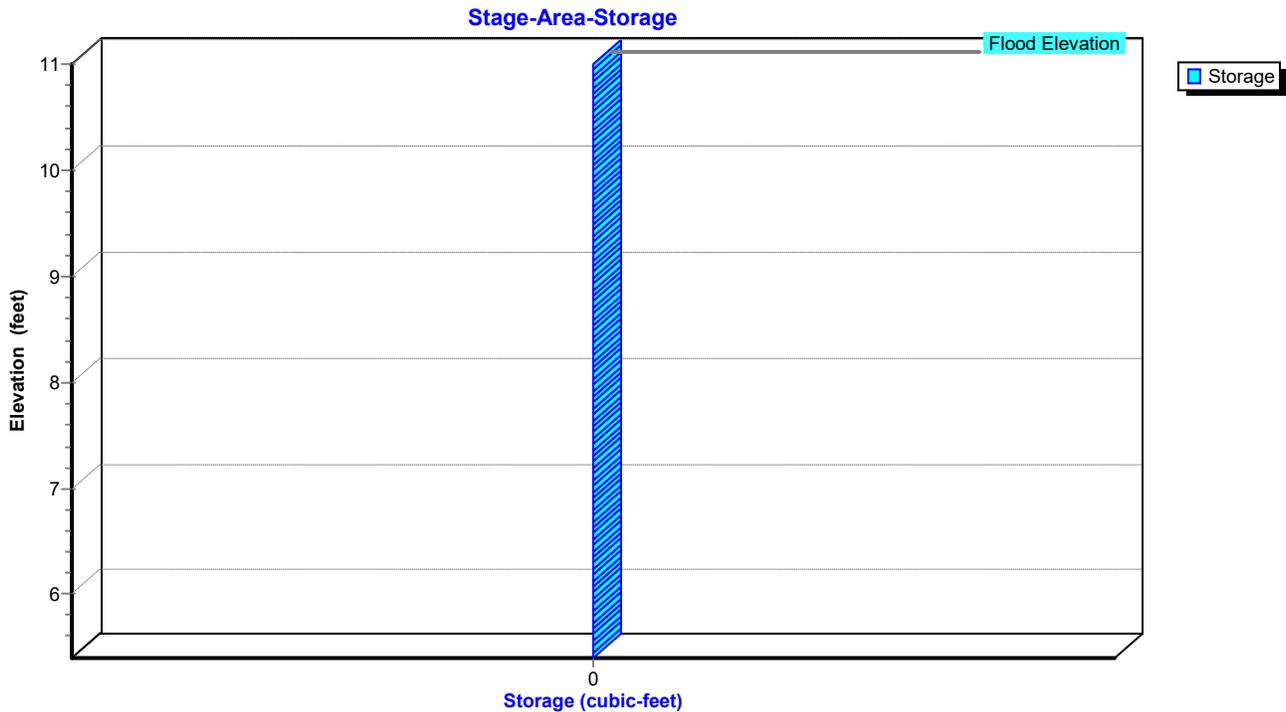
Hydrograph



Pond LS: Level Spreader 1 NPDES Outfall 2



Pond LS: Level Spreader 1 NPDES Outfall 2



Hydrograph for Pond LS: Level Spreader 1 NPDES Outfall 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	5.40	0.00	103.00	0.00	5.40	0.00
3.00	0.00	5.40	0.00	105.00	0.00	5.40	0.00
5.00	0.00	5.40	0.00	107.00	0.00	5.40	0.00
7.00	0.00	5.40	0.00	109.00	0.00	5.40	0.00
9.00	0.01	5.40	0.01	111.00	0.00	5.40	0.00
11.00	0.06	5.40	0.06	113.00	0.00	5.40	0.00
13.00	1.10	5.43	1.10	115.00	0.00	5.40	0.00
15.00	0.63	5.42	0.63	117.00	0.00	5.40	0.00
17.00	0.32	5.41	0.32	119.00	0.00	5.40	0.00
19.00	0.20	5.41	0.20				
21.00	0.15	5.40	0.15				
23.00	0.12	5.40	0.12				
25.00	0.08	5.40	0.08				
27.00	0.02	5.40	0.02				
29.00	0.00	5.40	0.00				
31.00	0.00	5.40	0.00				
33.00	0.00	5.40	0.00				
35.00	0.00	5.40	0.00				
37.00	0.00	5.40	0.00				
39.00	0.00	5.40	0.00				
41.00	0.00	5.40	0.00				
43.00	0.00	5.40	0.00				
45.00	0.00	5.40	0.00				
47.00	0.00	5.40	0.00				
49.00	0.00	5.40	0.00				
51.00	0.00	5.40	0.00				
53.00	0.00	5.40	0.00				
55.00	0.00	5.40	0.00				
57.00	0.00	5.40	0.00				
59.00	0.00	5.40	0.00				
61.00	0.00	5.40	0.00				
63.00	0.00	5.40	0.00				
65.00	0.00	5.40	0.00				
67.00	0.00	5.40	0.00				
69.00	0.00	5.40	0.00				
71.00	0.00	5.40	0.00				
73.00	0.00	5.40	0.00				
75.00	0.00	5.40	0.00				
77.00	0.00	5.40	0.00				
79.00	0.00	5.40	0.00				
81.00	0.00	5.40	0.00				
83.00	0.00	5.40	0.00				
85.00	0.00	5.40	0.00				
87.00	0.00	5.40	0.00				
89.00	0.00	5.40	0.00				
91.00	0.00	5.40	0.00				
93.00	0.00	5.40	0.00				
95.00	0.00	5.40	0.00				
97.00	0.00	5.40	0.00				
99.00	0.00	5.40	0.00				
101.00	0.00	5.40	0.00				

Stage-Discharge for Pond LS: Level Spreader 1 NPDES Outfall 2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
5.40	0.00	7.44	424.86	9.48	1,190.70
5.44	1.18	7.48	437.34	9.52	1,208.04
5.48	3.33	7.52	449.94	9.56	1,225.45
5.52	6.11	7.56	462.65	9.60	1,242.94
5.56	9.41	7.60	475.47	9.64	1,260.51
5.60	13.15	7.64	488.41	9.68	1,278.16
5.64	17.28	7.68	501.46	9.72	1,295.88
5.68	21.77	7.72	514.63	9.76	1,313.69
5.72	26.60	7.76	527.90	9.80	1,331.56
5.76	31.73	7.80	541.28	9.84	1,349.52
5.80	37.16	7.84	554.77	9.88	1,367.55
5.84	42.86	7.88	568.36	9.92	1,385.65
5.88	48.83	7.92	582.06	9.96	1,403.83
5.92	55.05	7.96	595.87	10.00	1,422.09
5.96	61.51	8.00	609.78	10.04	1,440.41
6.00	68.21	8.04	623.79	10.08	1,458.82
6.04	75.13	8.08	637.91	10.12	1,477.29
6.08	82.26	8.12	652.13	10.16	1,495.84
6.12	89.61	8.16	666.44	10.20	1,514.46
6.16	97.17	8.20	680.86	10.24	1,533.15
6.20	104.92	8.24	695.38	10.28	1,551.91
6.24	112.86	8.28	709.99	10.32	1,570.75
6.28	121.00	8.32	724.71	10.36	1,589.65
6.32	129.32	8.36	739.51	10.40	1,608.63
6.36	137.82	8.40	754.42	10.44	1,627.67
6.40	146.50	8.44	769.42	10.48	1,646.79
6.44	155.35	8.48	784.51	10.52	1,665.97
6.48	164.36	8.52	799.70	10.56	1,685.23
6.52	173.55	8.56	814.98	10.60	1,704.55
6.56	182.90	8.60	830.36	10.64	1,723.94
6.60	192.40	8.64	845.82	10.68	1,743.40
6.64	202.07	8.68	861.38	10.72	1,762.93
6.68	211.88	8.72	877.02	10.76	1,782.53
6.72	221.85	8.76	892.76	10.80	1,802.19
6.76	231.97	8.80	908.59	10.84	1,821.92
6.80	242.24	8.84	924.50	10.88	1,841.72
6.84	252.65	8.88	940.50	10.92	1,861.58
6.88	263.20	8.92	956.59	10.96	1,881.51
6.92	273.89	8.96	972.77	11.00	1,901.50
6.96	284.72	9.00	989.03		
7.00	295.69	9.04	1,005.38		
7.04	306.80	9.08	1,021.81		
7.08	318.03	9.12	1,038.33		
7.12	329.40	9.16	1,054.93		
7.16	340.89	9.20	1,071.61		
7.20	352.52	9.24	1,088.38		
7.24	364.27	9.28	1,105.23		
7.28	376.14	9.32	1,122.16		
7.32	388.14	9.36	1,139.18		
7.36	400.26	9.40	1,156.27		
7.40	412.50	9.44	1,173.45		

Stage-Area-Storage for Pond LS: Level Spreader 1 NPDES Outfall 2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
5.40	0	7.44	0	9.48	0
5.44	0	7.48	0	9.52	0
5.48	0	7.52	0	9.56	0
5.52	0	7.56	0	9.60	0
5.56	0	7.60	0	9.64	0
5.60	0	7.64	0	9.68	0
5.64	0	7.68	0	9.72	0
5.68	0	7.72	0	9.76	0
5.72	0	7.76	0	9.80	0
5.76	0	7.80	0	9.84	0
5.80	0	7.84	0	9.88	0
5.84	0	7.88	0	9.92	0
5.88	0	7.92	0	9.96	0
5.92	0	7.96	0	10.00	0
5.96	0	8.00	0	10.04	0
6.00	0	8.04	0	10.08	0
6.04	0	8.08	0	10.12	0
6.08	0	8.12	0	10.16	0
6.12	0	8.16	0	10.20	0
6.16	0	8.20	0	10.24	0
6.20	0	8.24	0	10.28	0
6.24	0	8.28	0	10.32	0
6.28	0	8.32	0	10.36	0
6.32	0	8.36	0	10.40	0
6.36	0	8.40	0	10.44	0
6.40	0	8.44	0	10.48	0
6.44	0	8.48	0	10.52	0
6.48	0	8.52	0	10.56	0
6.52	0	8.56	0	10.60	0
6.56	0	8.60	0	10.64	0
6.60	0	8.64	0	10.68	0
6.64	0	8.68	0	10.72	0
6.68	0	8.72	0	10.76	0
6.72	0	8.76	0	10.80	0
6.76	0	8.80	0	10.84	0
6.80	0	8.84	0	10.88	0
6.84	0	8.88	0	10.92	0
6.88	0	8.92	0	10.96	0
6.92	0	8.96	0	11.00	0
6.96	0	9.00	0		
7.00	0	9.04	0		
7.04	0	9.08	0		
7.08	0	9.12	0		
7.12	0	9.16	0		
7.16	0	9.20	0		
7.20	0	9.24	0		
7.24	0	9.28	0		
7.28	0	9.32	0		
7.32	0	9.36	0		
7.36	0	9.40	0		
7.40	0	9.44	0		

Summary for Pond LS-1: Level Spreader 1 NPDES Outfall 2

Inflow Area = 6.498 ac, 42.35% Impervious, Inflow Depth = 0.88" for Rpv-1YR event
 Inflow = 1.37 cfs @ 12.96 hrs, Volume= 0.476 af
 Outflow = 1.37 cfs @ 12.96 hrs, Volume= 0.476 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.37 cfs @ 12.96 hrs, Volume= 0.476 af

Routing by Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 5.44' @ 12.96 hrs

Flood Elev= 11.00'

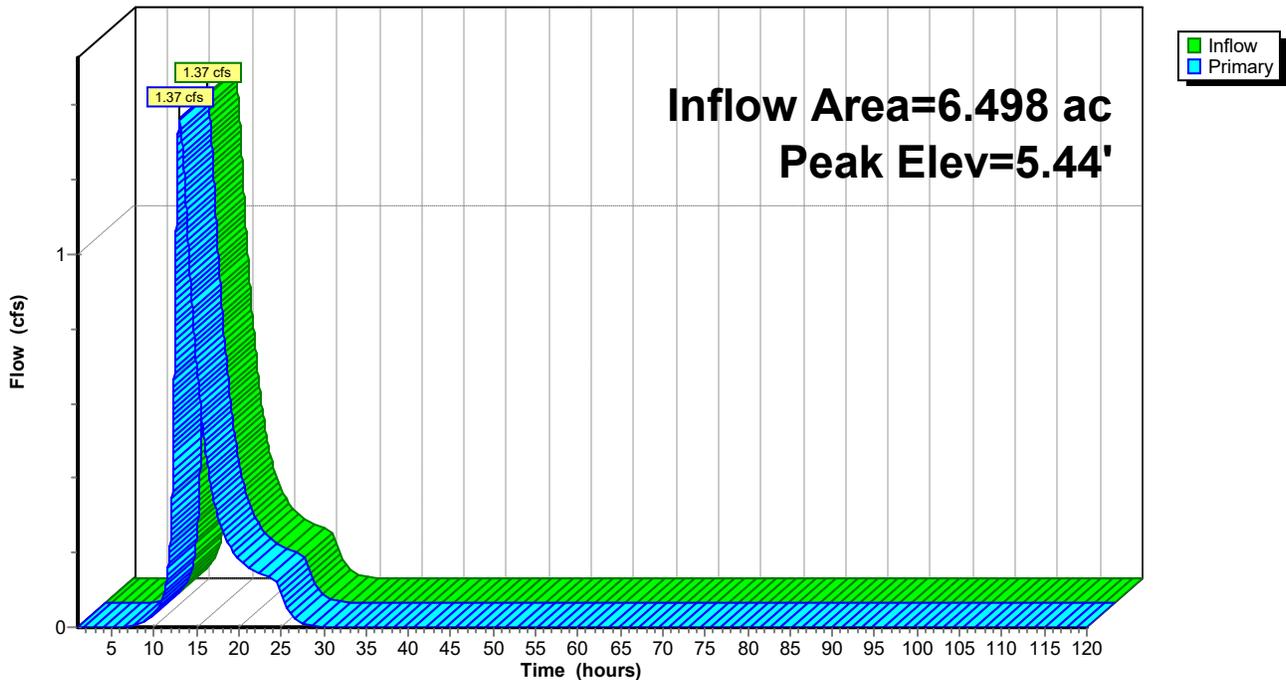
Device	Routing	Invert	Outlet Devices
#1	Primary	5.40'	45.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=1.14 cfs @ 12.96 hrs HW=5.44' (Free Discharge)

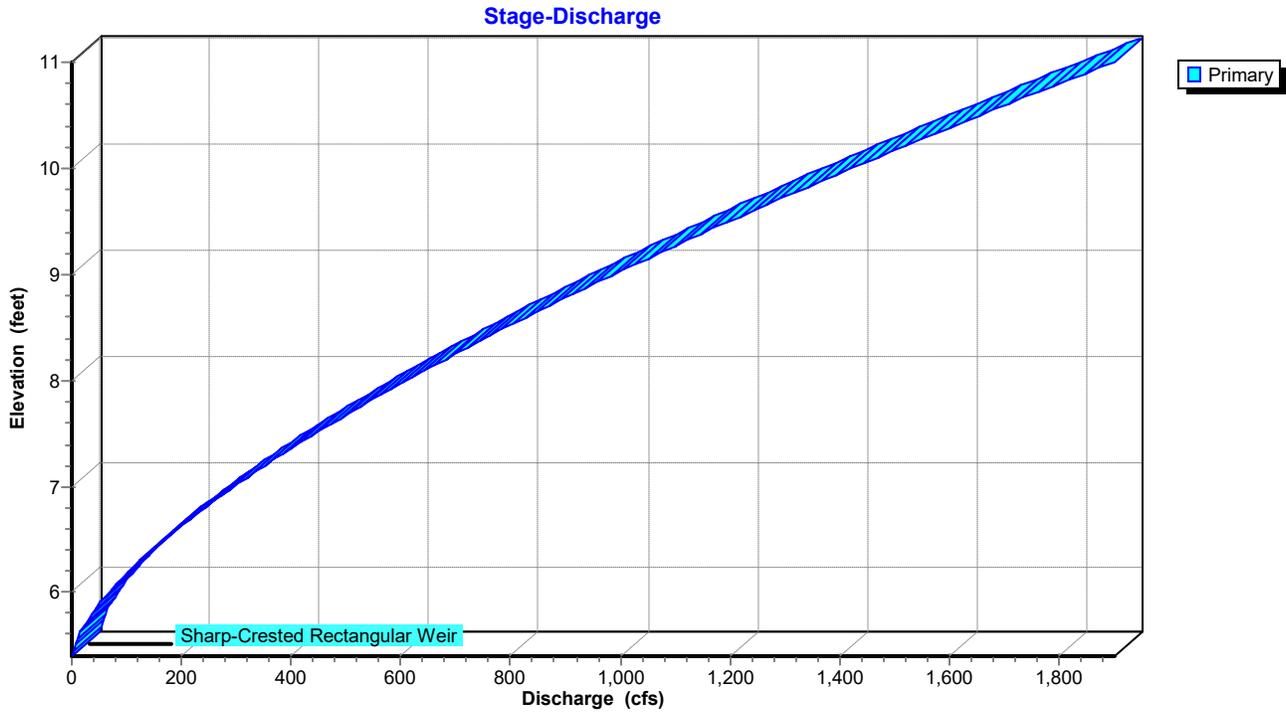
↳1=Sharp-Crested Rectangular Weir (Weir Controls 1.14 cfs @ 0.65 fps)

Pond LS-1: Level Spreader 1 NPDES Outfall 2

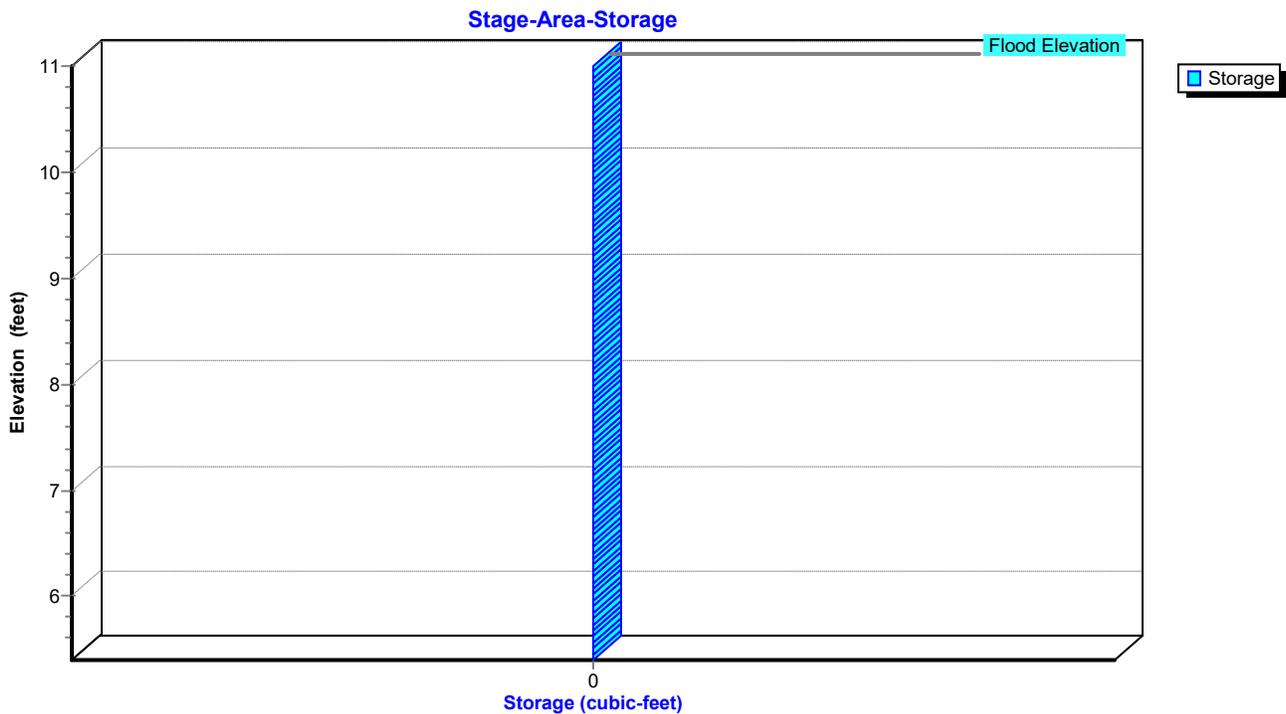
Hydrograph



Pond LS-1: Level Spreader 1 NPDES Outfall 2



Pond LS-1: Level Spreader 1 NPDES Outfall 2



Hydrograph for Pond LS-1: Level Spreader 1 NPDES Outfall 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	5.40	0.00	103.00	0.00	5.40	0.00
3.00	0.00	5.40	0.00	105.00	0.00	5.40	0.00
5.00	0.00	5.40	0.00	107.00	0.00	5.40	0.00
7.00	0.00	5.40	0.00	109.00	0.00	5.40	0.00
9.00	0.02	5.40	0.02	111.00	0.00	5.40	0.00
11.00	0.08	5.40	0.08	113.00	0.00	5.40	0.00
13.00	1.36	5.44	1.36	115.00	0.00	5.40	0.00
15.00	0.71	5.42	0.71	117.00	0.00	5.40	0.00
17.00	0.35	5.41	0.35	119.00	0.00	5.40	0.00
19.00	0.21	5.41	0.21				
21.00	0.16	5.40	0.16				
23.00	0.14	5.40	0.14				
25.00	0.08	5.40	0.08				
27.00	0.02	5.40	0.02				
29.00	0.00	5.40	0.00				
31.00	0.00	5.40	0.00				
33.00	0.00	5.40	0.00				
35.00	0.00	5.40	0.00				
37.00	0.00	5.40	0.00				
39.00	0.00	5.40	0.00				
41.00	0.00	5.40	0.00				
43.00	0.00	5.40	0.00				
45.00	0.00	5.40	0.00				
47.00	0.00	5.40	0.00				
49.00	0.00	5.40	0.00				
51.00	0.00	5.40	0.00				
53.00	0.00	5.40	0.00				
55.00	0.00	5.40	0.00				
57.00	0.00	5.40	0.00				
59.00	0.00	5.40	0.00				
61.00	0.00	5.40	0.00				
63.00	0.00	5.40	0.00				
65.00	0.00	5.40	0.00				
67.00	0.00	5.40	0.00				
69.00	0.00	5.40	0.00				
71.00	0.00	5.40	0.00				
73.00	0.00	5.40	0.00				
75.00	0.00	5.40	0.00				
77.00	0.00	5.40	0.00				
79.00	0.00	5.40	0.00				
81.00	0.00	5.40	0.00				
83.00	0.00	5.40	0.00				
85.00	0.00	5.40	0.00				
87.00	0.00	5.40	0.00				
89.00	0.00	5.40	0.00				
91.00	0.00	5.40	0.00				
93.00	0.00	5.40	0.00				
95.00	0.00	5.40	0.00				
97.00	0.00	5.40	0.00				
99.00	0.00	5.40	0.00				
101.00	0.00	5.40	0.00				

Stage-Discharge for Pond LS-1: Level Spreader 1 NPDES Outfall 2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
5.40	0.00	7.44	424.86	9.48	1,190.70
5.44	1.18	7.48	437.34	9.52	1,208.04
5.48	3.33	7.52	449.94	9.56	1,225.45
5.52	6.11	7.56	462.65	9.60	1,242.94
5.56	9.41	7.60	475.47	9.64	1,260.51
5.60	13.15	7.64	488.41	9.68	1,278.16
5.64	17.28	7.68	501.46	9.72	1,295.88
5.68	21.77	7.72	514.63	9.76	1,313.69
5.72	26.60	7.76	527.90	9.80	1,331.56
5.76	31.73	7.80	541.28	9.84	1,349.52
5.80	37.16	7.84	554.77	9.88	1,367.55
5.84	42.86	7.88	568.36	9.92	1,385.65
5.88	48.83	7.92	582.06	9.96	1,403.83
5.92	55.05	7.96	595.87	10.00	1,422.09
5.96	61.51	8.00	609.78	10.04	1,440.41
6.00	68.21	8.04	623.79	10.08	1,458.82
6.04	75.13	8.08	637.91	10.12	1,477.29
6.08	82.26	8.12	652.13	10.16	1,495.84
6.12	89.61	8.16	666.44	10.20	1,514.46
6.16	97.17	8.20	680.86	10.24	1,533.15
6.20	104.92	8.24	695.38	10.28	1,551.91
6.24	112.86	8.28	709.99	10.32	1,570.75
6.28	121.00	8.32	724.71	10.36	1,589.65
6.32	129.32	8.36	739.51	10.40	1,608.63
6.36	137.82	8.40	754.42	10.44	1,627.67
6.40	146.50	8.44	769.42	10.48	1,646.79
6.44	155.35	8.48	784.51	10.52	1,665.97
6.48	164.36	8.52	799.70	10.56	1,685.23
6.52	173.55	8.56	814.98	10.60	1,704.55
6.56	182.90	8.60	830.36	10.64	1,723.94
6.60	192.40	8.64	845.82	10.68	1,743.40
6.64	202.07	8.68	861.38	10.72	1,762.93
6.68	211.88	8.72	877.02	10.76	1,782.53
6.72	221.85	8.76	892.76	10.80	1,802.19
6.76	231.97	8.80	908.59	10.84	1,821.92
6.80	242.24	8.84	924.50	10.88	1,841.72
6.84	252.65	8.88	940.50	10.92	1,861.58
6.88	263.20	8.92	956.59	10.96	1,881.51
6.92	273.89	8.96	972.77	11.00	1,901.50
6.96	284.72	9.00	989.03		
7.00	295.69	9.04	1,005.38		
7.04	306.80	9.08	1,021.81		
7.08	318.03	9.12	1,038.33		
7.12	329.40	9.16	1,054.93		
7.16	340.89	9.20	1,071.61		
7.20	352.52	9.24	1,088.38		
7.24	364.27	9.28	1,105.23		
7.28	376.14	9.32	1,122.16		
7.32	388.14	9.36	1,139.18		
7.36	400.26	9.40	1,156.27		
7.40	412.50	9.44	1,173.45		

Stage-Area-Storage for Pond LS-1: Level Spreader 1 NPDES Outfall 2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
5.40	0	7.44	0	9.48	0
5.44	0	7.48	0	9.52	0
5.48	0	7.52	0	9.56	0
5.52	0	7.56	0	9.60	0
5.56	0	7.60	0	9.64	0
5.60	0	7.64	0	9.68	0
5.64	0	7.68	0	9.72	0
5.68	0	7.72	0	9.76	0
5.72	0	7.76	0	9.80	0
5.76	0	7.80	0	9.84	0
5.80	0	7.84	0	9.88	0
5.84	0	7.88	0	9.92	0
5.88	0	7.92	0	9.96	0
5.92	0	7.96	0	10.00	0
5.96	0	8.00	0	10.04	0
6.00	0	8.04	0	10.08	0
6.04	0	8.08	0	10.12	0
6.08	0	8.12	0	10.16	0
6.12	0	8.16	0	10.20	0
6.16	0	8.20	0	10.24	0
6.20	0	8.24	0	10.28	0
6.24	0	8.28	0	10.32	0
6.28	0	8.32	0	10.36	0
6.32	0	8.36	0	10.40	0
6.36	0	8.40	0	10.44	0
6.40	0	8.44	0	10.48	0
6.44	0	8.48	0	10.52	0
6.48	0	8.52	0	10.56	0
6.52	0	8.56	0	10.60	0
6.56	0	8.60	0	10.64	0
6.60	0	8.64	0	10.68	0
6.64	0	8.68	0	10.72	0
6.68	0	8.72	0	10.76	0
6.72	0	8.76	0	10.80	0
6.76	0	8.80	0	10.84	0
6.80	0	8.84	0	10.88	0
6.84	0	8.88	0	10.92	0
6.88	0	8.92	0	10.96	0
6.92	0	8.96	0	11.00	0
6.96	0	9.00	0		
7.00	0	9.04	0		
7.04	0	9.08	0		
7.08	0	9.12	0		
7.12	0	9.16	0		
7.16	0	9.20	0		
7.20	0	9.24	0		
7.24	0	9.28	0		
7.28	0	9.32	0		
7.32	0	9.36	0		
7.36	0	9.40	0		
7.40	0	9.44	0		

Summary for Pond P-1: Compost Building

Inflow Area = 2.179 ac, 62.17% Impervious, Inflow Depth = 1.50" for Rpv-1YR event
 Inflow = 3.21 cfs @ 12.13 hrs, Volume= 0.273 af
 Outflow = 2.92 cfs @ 12.16 hrs, Volume= 0.273 af, Atten= 9%, Lag= 1.9 min
 Primary = 2.92 cfs @ 12.16 hrs, Volume= 0.273 af

Routing by Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 8.37' @ 12.16 hrs Surf.Area= 1,957 sf Storage= 366 cf

Plug-Flow detention time= 1.2 min calculated for 0.273 af (100% of inflow)
 Center-of-Mass det. time= 1.2 min (822.6 - 821.4)

Volume	Invert	Avail.Storage	Storage Description
#1	8.00'	12,294 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

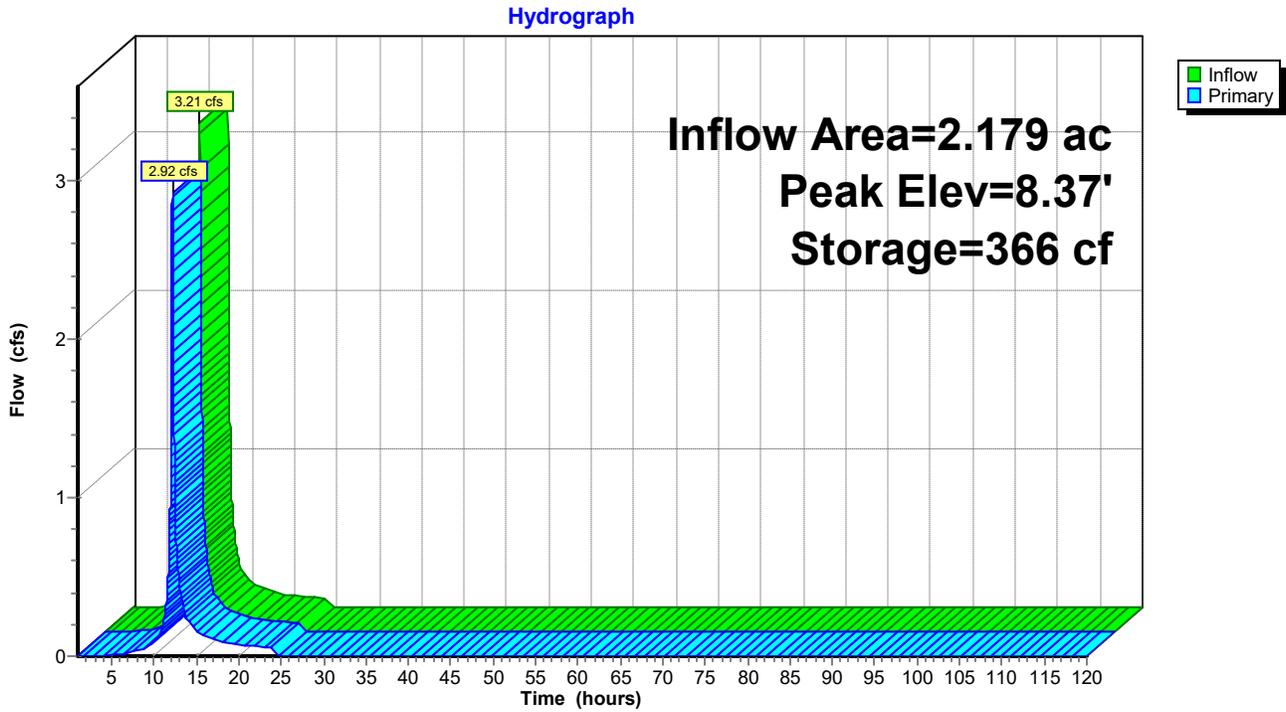
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.00	10	0	0
9.00	5,235	2,623	2,623
9.50	18,583	5,955	8,577
9.70	18,583	3,717	12,294

Device	Routing	Invert	Outlet Devices
#1	Primary	8.00'	48.0" W x 24.0" H Box Culvert L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.00' / 7.50' S= 0.0109 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 8.00 sf
#2	Primary	9.50'	200.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

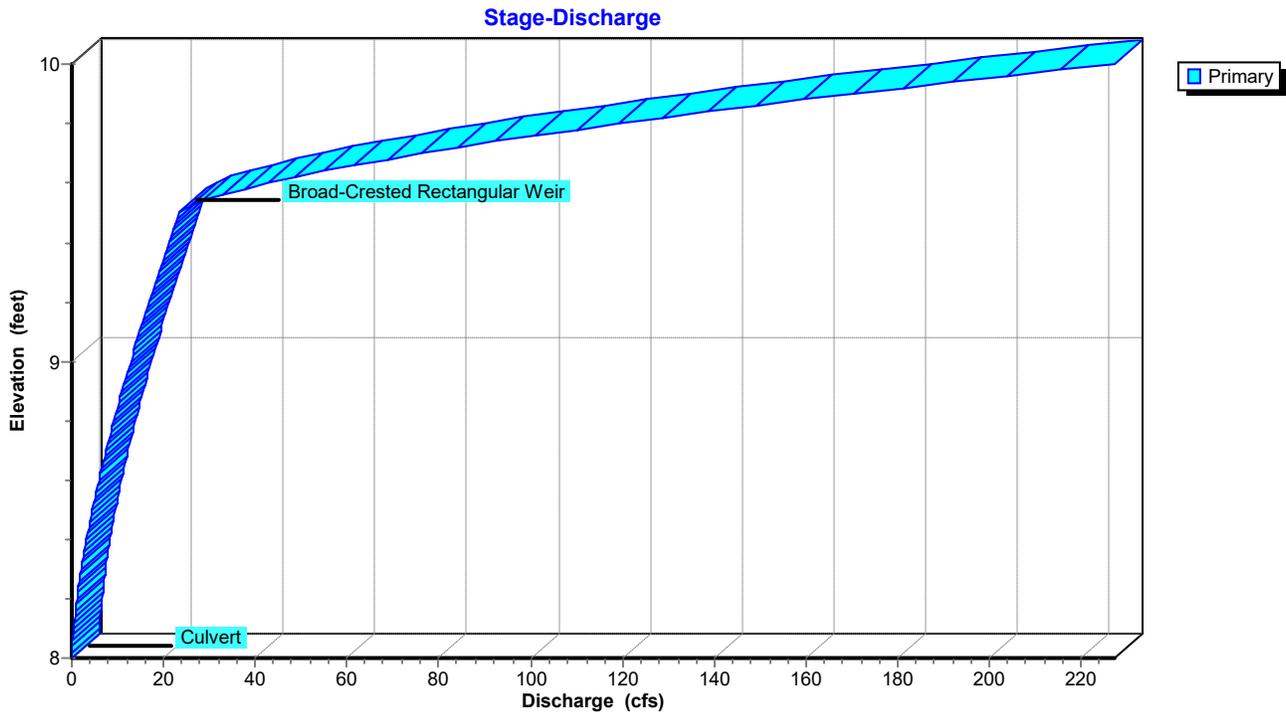
Primary OutFlow Max=2.92 cfs @ 12.16 hrs HW=8.37' (Free Discharge)

- 1=Culvert (Inlet Controls 2.92 cfs @ 1.96 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

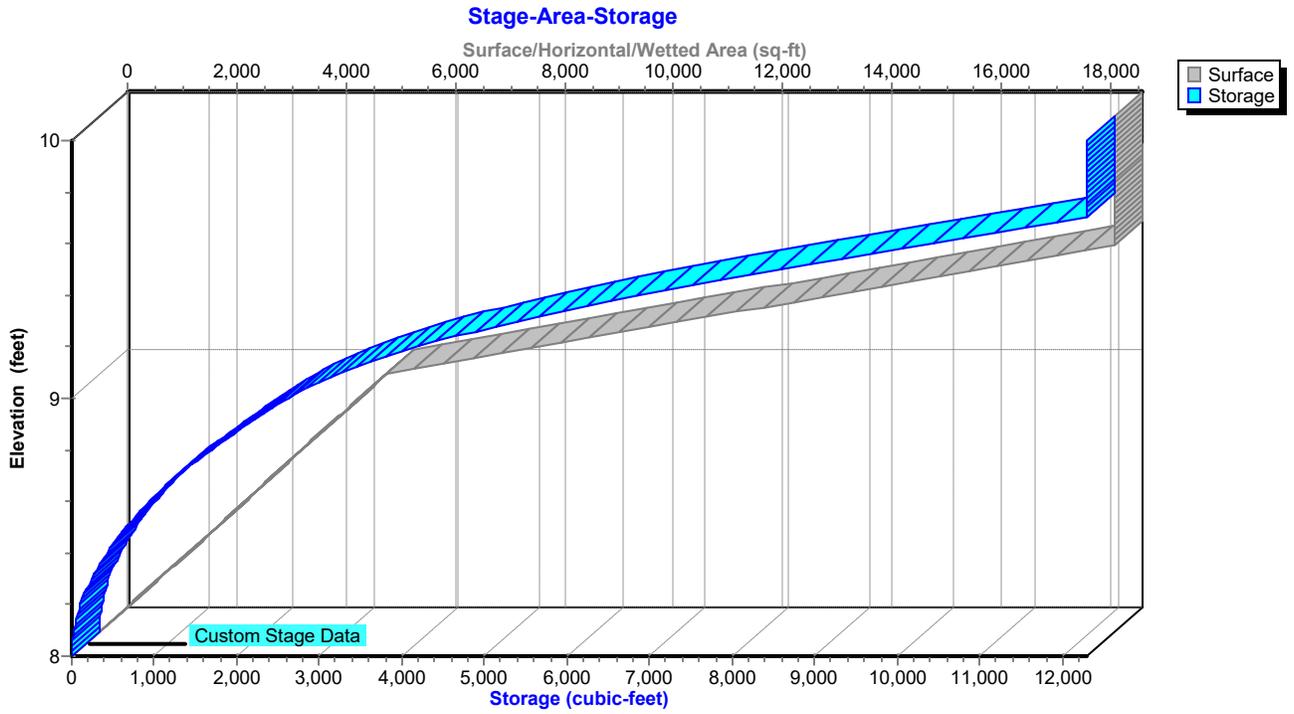
Pond P-1: Compost Building



Pond P-1: Compost Building



Pond P-1: Compost Building



Hydrograph for Pond P-1: Compost Building

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	8.00	0.00	103.00	0.00	0	8.00	0.00
3.00	0.00	0	8.00	0.00	105.00	0.00	0	8.00	0.00
5.00	0.01	0	8.00	0.01	107.00	0.00	0	8.00	0.00
7.00	0.02	1	8.01	0.02	109.00	0.00	0	8.00	0.00
9.00	0.05	2	8.02	0.05	111.00	0.00	0	8.00	0.00
11.00	0.19	10	8.06	0.19	113.00	0.00	0	8.00	0.00
13.00	0.45	32	8.11	0.46	115.00	0.00	0	8.00	0.00
15.00	0.16	8	8.05	0.16	117.00	0.00	0	8.00	0.00
17.00	0.11	5	8.04	0.11	119.00	0.00	0	8.00	0.00
19.00	0.08	3	8.03	0.08					
21.00	0.07	3	8.03	0.07					
23.00	0.06	2	8.03	0.06					
25.00	0.00	0	8.00	0.00					
27.00	0.00	0	8.00	0.00					
29.00	0.00	0	8.00	0.00					
31.00	0.00	0	8.00	0.00					
33.00	0.00	0	8.00	0.00					
35.00	0.00	0	8.00	0.00					
37.00	0.00	0	8.00	0.00					
39.00	0.00	0	8.00	0.00					
41.00	0.00	0	8.00	0.00					
43.00	0.00	0	8.00	0.00					
45.00	0.00	0	8.00	0.00					
47.00	0.00	0	8.00	0.00					
49.00	0.00	0	8.00	0.00					
51.00	0.00	0	8.00	0.00					
53.00	0.00	0	8.00	0.00					
55.00	0.00	0	8.00	0.00					
57.00	0.00	0	8.00	0.00					
59.00	0.00	0	8.00	0.00					
61.00	0.00	0	8.00	0.00					
63.00	0.00	0	8.00	0.00					
65.00	0.00	0	8.00	0.00					
67.00	0.00	0	8.00	0.00					
69.00	0.00	0	8.00	0.00					
71.00	0.00	0	8.00	0.00					
73.00	0.00	0	8.00	0.00					
75.00	0.00	0	8.00	0.00					
77.00	0.00	0	8.00	0.00					
79.00	0.00	0	8.00	0.00					
81.00	0.00	0	8.00	0.00					
83.00	0.00	0	8.00	0.00					
85.00	0.00	0	8.00	0.00					
87.00	0.00	0	8.00	0.00					
89.00	0.00	0	8.00	0.00					
91.00	0.00	0	8.00	0.00					
93.00	0.00	0	8.00	0.00					
95.00	0.00	0	8.00	0.00					
97.00	0.00	0	8.00	0.00					
99.00	0.00	0	8.00	0.00					
101.00	0.00	0	8.00	0.00					

Stage-Discharge for Pond P-1: Compost Building

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
8.00	0.00	8.51	4.68	9.02	13.23	9.53	27.08
8.01	0.01	8.52	4.81	9.03	13.42	9.54	28.83
8.02	0.04	8.53	4.95	9.04	13.62	9.55	30.77
8.03	0.07	8.54	5.10	9.05	13.81	9.56	32.90
8.04	0.10	8.55	5.24	9.06	14.01	9.57	35.19
8.05	0.14	8.56	5.38	9.07	14.21	9.58	37.63
8.06	0.19	8.57	5.53	9.08	14.41	9.59	40.21
8.07	0.24	8.58	5.67	9.09	14.61	9.60	42.94
8.08	0.29	8.59	5.82	9.10	14.81	9.61	45.79
8.09	0.35	8.60	5.97	9.11	15.02	9.62	48.76
8.10	0.41	8.61	6.12	9.12	15.22	9.63	51.84
8.11	0.47	8.62	6.27	9.13	15.42	9.64	55.04
8.12	0.53	8.63	6.42	9.14	15.63	9.65	58.35
8.13	0.60	8.64	6.57	9.15	15.83	9.66	61.77
8.14	0.67	8.65	6.73	9.16	16.04	9.67	65.28
8.15	0.75	8.66	6.88	9.17	16.25	9.68	68.89
8.16	0.82	8.67	7.04	9.18	16.46	9.69	72.60
8.17	0.90	8.68	7.20	9.19	16.67	9.70	76.40
8.18	0.98	8.69	7.36	9.20	16.88	9.71	80.31
8.19	1.06	8.70	7.52	9.21	17.09	9.72	84.31
8.20	1.15	8.71	7.68	9.22	17.30	9.73	88.41
8.21	1.24	8.72	7.84	9.23	17.52	9.74	92.58
8.22	1.32	8.73	8.01	9.24	17.73	9.75	96.85
8.23	1.42	8.74	8.17	9.25	17.94	9.76	101.20
8.24	1.51	8.75	8.34	9.26	18.16	9.77	105.63
8.25	1.60	8.76	8.51	9.27	18.38	9.78	110.14
8.26	1.70	8.77	8.68	9.28	18.59	9.79	114.74
8.27	1.80	8.78	8.85	9.29	18.81	9.80	119.41
8.28	1.90	8.79	9.02	9.30	19.03	9.81	124.16
8.29	2.01	8.80	9.19	9.31	19.25	9.82	128.99
8.30	2.11	8.81	9.36	9.32	19.47	9.83	133.89
8.31	2.22	8.82	9.53	9.33	19.69	9.84	138.87
8.32	2.32	8.83	9.71	9.34	19.92	9.85	143.92
8.33	2.43	8.84	9.89	9.35	20.14	9.86	149.04
8.34	2.55	8.85	10.06	9.36	20.36	9.87	154.23
8.35	2.66	8.86	10.24	9.37	20.59	9.88	159.50
8.36	2.77	8.87	10.42	9.38	20.82	9.89	164.83
8.37	2.89	8.88	10.60	9.39	21.04	9.90	170.24
8.38	3.01	8.89	10.78	9.40	21.27	9.91	175.66
8.39	3.13	8.90	10.96	9.41	21.50	9.92	181.14
8.40	3.25	8.91	11.15	9.42	21.73	9.93	186.69
8.41	3.37	8.92	11.33	9.43	21.96	9.94	192.30
8.42	3.49	8.93	11.52	9.44	22.19	9.95	197.97
8.43	3.62	8.94	11.70	9.45	22.42	9.96	203.71
8.44	3.75	8.95	11.89	9.46	22.65	9.97	209.50
8.45	3.88	8.96	12.08	9.47	22.88	9.98	215.35
8.46	4.01	8.97	12.27	9.48	23.12	9.99	221.26
8.47	4.14	8.98	12.46	9.49	23.35	10.00	227.24
8.48	4.27	8.99	12.65	9.50	23.59		
8.49	4.40	9.00	12.84	9.51	24.36		
8.50	4.54	9.01	13.03	9.52	25.58		

Stage-Area-Storage for Pond P-1: Compost Building

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
8.00	10	0	9.02	5,769	2,733
8.02	114	1	9.04	6,303	2,853
8.04	219	5	9.06	6,837	2,985
8.06	324	10	9.08	7,371	3,127
8.08	428	18	9.10	7,905	3,279
8.10	532	27	9.12	8,439	3,443
8.12	637	39	9.14	8,972	3,617
8.14	742	53	9.16	9,506	3,802
8.16	846	68	9.18	10,040	3,997
8.18	950	86	9.20	10,574	4,203
8.20	1,055	106	9.22	11,108	4,420
8.22	1,160	129	9.24	11,642	4,648
8.24	1,264	153	9.26	12,176	4,886
8.26	1,368	179	9.28	12,710	5,135
8.28	1,473	208	9.30	13,244	5,394
8.30	1,578	238	9.32	13,778	5,665
8.32	1,682	271	9.34	14,312	5,945
8.34	1,786	305	9.36	14,846	6,237
8.36	1,891	342	9.38	15,379	6,539
8.38	1,996	381	9.40	15,913	6,852
8.40	2,100	422	9.42	16,447	7,176
8.42	2,204	465	9.44	16,981	7,510
8.44	2,309	510	9.46	17,515	7,855
8.46	2,414	557	9.48	18,049	8,211
8.48	2,518	607	9.50	18,583	8,577
8.50	2,623	658	9.52	18,583	8,949
8.52	2,727	712	9.54	18,583	9,320
8.54	2,831	767	9.56	18,583	9,692
8.56	2,936	825	9.58	18,583	10,064
8.58	3,041	885	9.60	18,583	10,435
8.60	3,145	946	9.62	18,583	10,807
8.62	3,249	1,010	9.64	18,583	11,179
8.64	3,354	1,076	9.66	18,583	11,550
8.66	3,459	1,145	9.68	18,583	11,922
8.68	3,563	1,215	9.70	18,583	12,294
8.70	3,667	1,287	9.72	18,583	12,294
8.72	3,772	1,362	9.74	18,583	12,294
8.74	3,877	1,438	9.76	18,583	12,294
8.76	3,981	1,517	9.78	18,583	12,294
8.78	4,085	1,597	9.80	18,583	12,294
8.80	4,190	1,680	9.82	18,583	12,294
8.82	4,295	1,765	9.84	18,583	12,294
8.84	4,399	1,852	9.86	18,583	12,294
8.86	4,503	1,941	9.88	18,583	12,294
8.88	4,608	2,032	9.90	18,583	12,294
8.90	4,713	2,125	9.92	18,583	12,294
8.92	4,817	2,220	9.94	18,583	12,294
8.94	4,921	2,318	9.96	18,583	12,294
8.96	5,026	2,417	9.98	18,583	12,294
8.98	5,131	2,519	10.00	18,583	12,294
9.00	5,235	2,623			

Summary for Pond SGWs: SGW-Combo

Inflow Area = 10.978 ac, 56.54% Impervious, Inflow Depth = 1.40" for Rpv-1YR event
 Inflow = 10.63 cfs @ 12.23 hrs, Volume= 1.283 af
 Outflow = 2.63 cfs @ 13.03 hrs, Volume= 1.283 af, Atten= 75%, Lag= 47.5 min
 Primary = 2.63 cfs @ 13.03 hrs, Volume= 1.283 af

Routing by Stor-Ind method, Time Span= 1.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 5.39' @ 13.03 hrs Surf.Area= 20,655 sf Storage= 14,832 cf

Plug-Flow detention time= 82.0 min calculated for 1.282 af (100% of inflow)
 Center-of-Mass det. time= 81.9 min (1,001.9 - 919.9)

Volume	Invert	Avail.Storage	Storage Description
#1	4.50'	41,820 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

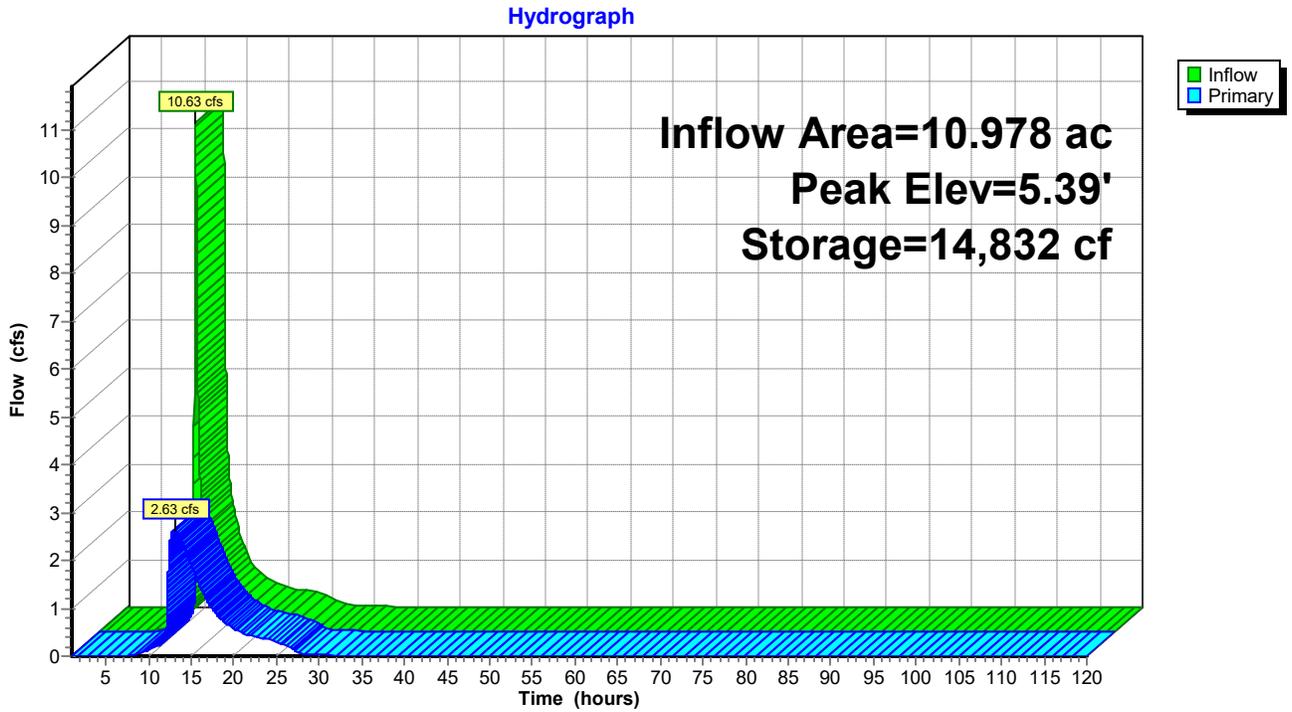
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4.50	10,502	0	0
5.00	18,280	7,196	7,196
5.50	21,308	9,897	17,093
6.00	24,615	11,481	28,573
6.50	28,370	13,246	41,820

Device	Routing	Invert	Outlet Devices
#1	Primary	4.30'	12.0" Round Culvert L= 19.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 4.30' / 4.13' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	5.45'	65.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

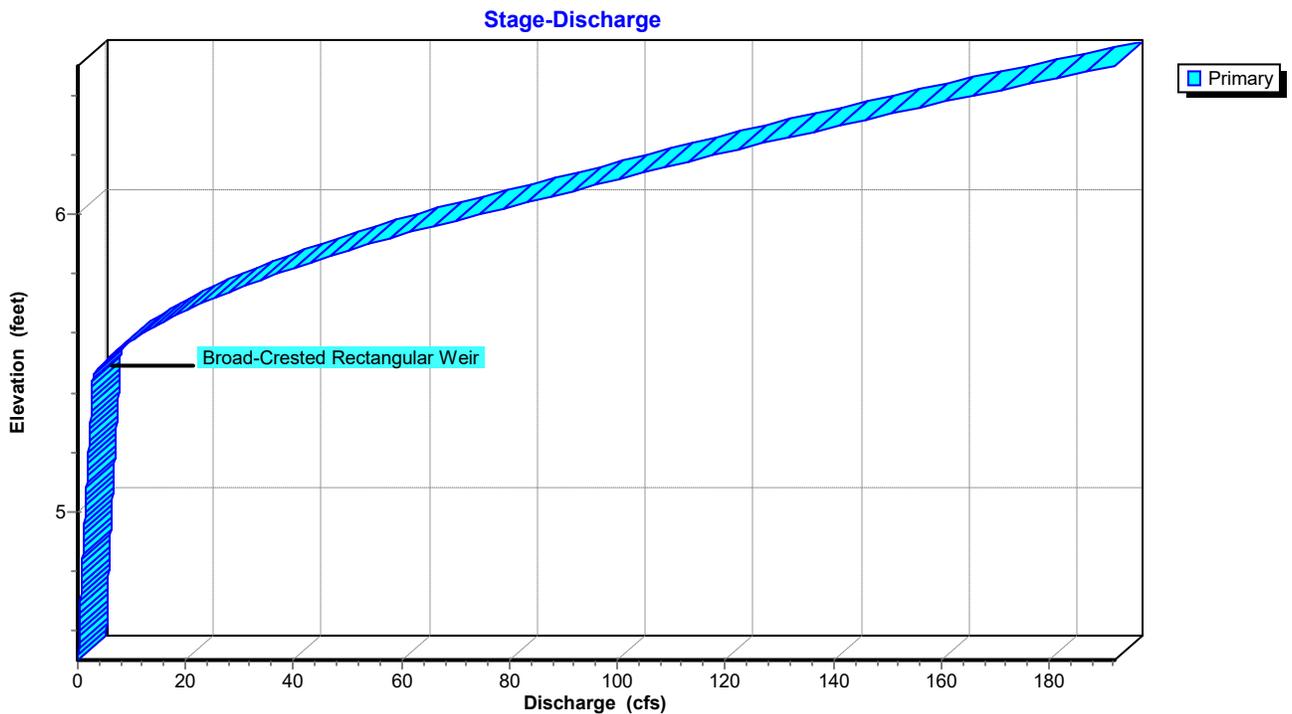
Primary OutFlow Max=2.63 cfs @ 13.03 hrs HW=5.39' (Free Discharge)

- 1=Culvert (Barrel Controls 2.63 cfs @ 3.82 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

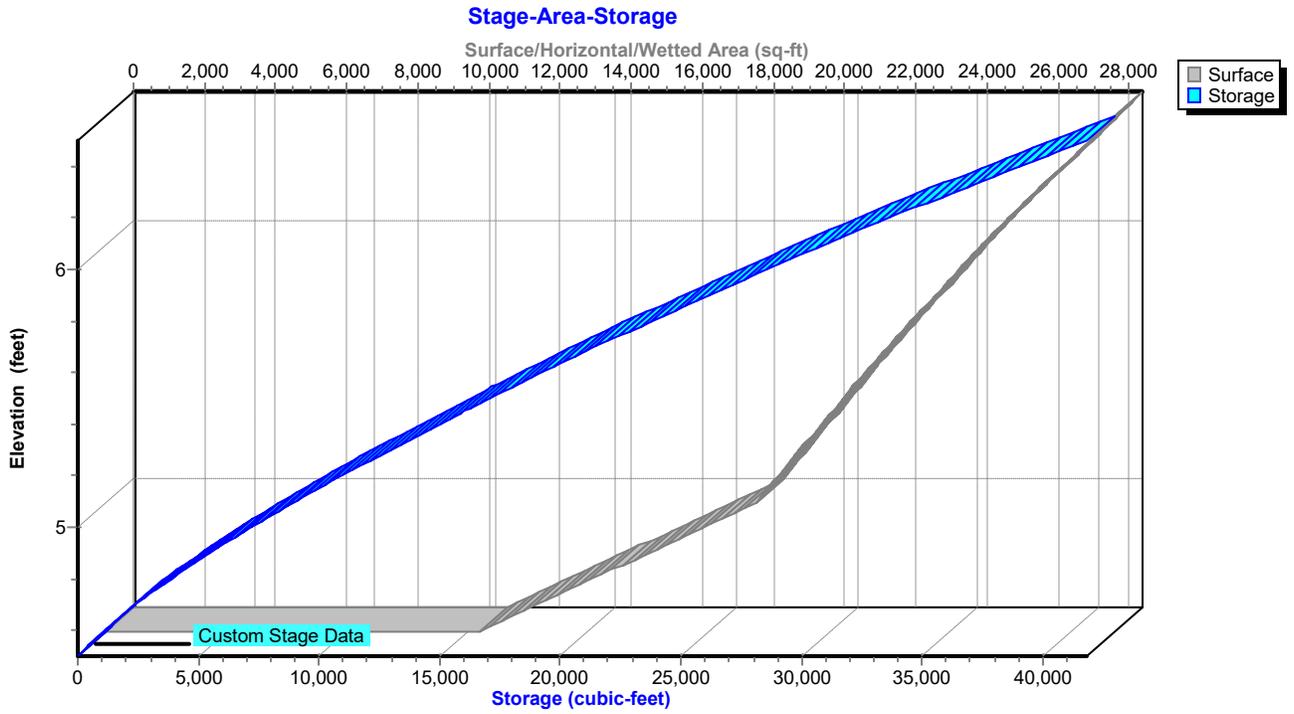
Pond SGWs: SGW-Combo



Pond SGWs: SGW-Combo



Pond SGWs: SGW-Combo



Hydrograph for Pond SGWs: SGW-Combo

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
1.00	0.00	0	4.50	0.00	103.00	0.00	0	4.50	0.00
3.00	0.00	0	4.50	0.00	105.00	0.00	0	4.50	0.00
5.00	0.00	1	4.50	0.00	107.00	0.00	0	4.50	0.00
7.00	0.01	9	4.50	0.01	109.00	0.00	0	4.50	0.00
9.00	0.08	73	4.51	0.06	111.00	0.00	0	4.50	0.00
11.00	0.37	433	4.54	0.20	113.00	0.00	0	4.50	0.00
13.00	2.68	14,829	5.39	2.63	115.00	0.00	0	4.50	0.00
15.00	1.13	10,359	5.17	1.92	117.00	0.00	0	4.50	0.00
17.00	0.66	5,769	4.92	1.12	119.00	0.00	0	4.50	0.00
19.00	0.46	3,364	4.77	0.69					
21.00	0.37	2,187	4.68	0.49					
23.00	0.32	1,587	4.64	0.38					
25.00	0.17	1,036	4.59	0.30					
27.00	0.07	179	4.52	0.15					
29.00	0.03	48	4.50	0.04					
31.00	0.02	27	4.50	0.02					
33.00	0.01	18	4.50	0.01					
35.00	0.01	12	4.50	0.01					
37.00	0.01	9	4.50	0.01					
39.00	0.01	7	4.50	0.01					
41.00	0.00	5	4.50	0.00					
43.00	0.00	5	4.50	0.00					
45.00	0.00	4	4.50	0.00					
47.00	0.00	3	4.50	0.00					
49.00	0.00	3	4.50	0.00					
51.00	0.00	2	4.50	0.00					
53.00	0.00	2	4.50	0.00					
55.00	0.00	2	4.50	0.00					
57.00	0.00	2	4.50	0.00					
59.00	0.00	1	4.50	0.00					
61.00	0.00	1	4.50	0.00					
63.00	0.00	1	4.50	0.00					
65.00	0.00	1	4.50	0.00					
67.00	0.00	1	4.50	0.00					
69.00	0.00	1	4.50	0.00					
71.00	0.00	1	4.50	0.00					
73.00	0.00	1	4.50	0.00					
75.00	0.00	1	4.50	0.00					
77.00	0.00	1	4.50	0.00					
79.00	0.00	1	4.50	0.00					
81.00	0.00	1	4.50	0.00					
83.00	0.00	1	4.50	0.00					
85.00	0.00	1	4.50	0.00					
87.00	0.00	1	4.50	0.00					
89.00	0.00	1	4.50	0.00					
91.00	0.00	1	4.50	0.00					
93.00	0.00	1	4.50	0.00					
95.00	0.00	1	4.50	0.00					
97.00	0.00	0	4.50	0.00					
99.00	0.00	0	4.50	0.00					
101.00	0.00	0	4.50	0.00					

Stage-Discharge for Pond SGWs: SGW-Combo

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
4.50	0.00	5.01	1.40	5.52	5.82	6.03	81.10
4.51	0.16	5.02	1.43	5.53	6.47	6.04	83.41
4.52	0.17	5.03	1.46	5.54	7.16	6.05	85.74
4.53	0.19	5.04	1.50	5.55	7.89	6.06	87.78
4.54	0.20	5.05	1.53	5.56	8.66	6.07	89.83
4.55	0.22	5.06	1.56	5.57	9.46	6.08	91.90
4.56	0.24	5.07	1.59	5.58	10.29	6.09	93.99
4.57	0.25	5.08	1.63	5.59	11.16	6.10	96.09
4.58	0.27	5.09	1.66	5.60	12.05	6.11	98.20
4.59	0.29	5.10	1.69	5.61	12.96	6.12	100.33
4.60	0.31	5.11	1.72	5.62	13.91	6.13	102.47
4.61	0.33	5.12	1.76	5.63	14.87	6.14	104.63
4.62	0.35	5.13	1.79	5.64	15.87	6.15	106.80
4.63	0.37	5.14	1.82	5.65	16.92	6.16	108.98
4.64	0.39	5.15	1.85	5.66	18.04	6.17	111.17
4.65	0.41	5.16	1.89	5.67	19.19	6.18	113.38
4.66	0.43	5.17	1.92	5.68	20.37	6.19	115.60
4.67	0.46	5.18	1.95	5.69	21.58	6.20	117.83
4.68	0.48	5.19	1.99	5.70	22.83	6.21	120.08
4.69	0.50	5.20	2.02	5.71	24.10	6.22	122.34
4.70	0.52	5.21	2.05	5.72	25.40	6.23	124.61
4.71	0.55	5.22	2.09	5.73	26.74	6.24	126.90
4.72	0.57	5.23	2.12	5.74	28.10	6.25	129.20
4.73	0.60	5.24	2.15	5.75	29.49	6.26	131.56
4.74	0.62	5.25	2.18	5.76	30.91	6.27	133.94
4.75	0.65	5.26	2.22	5.77	32.36	6.28	136.32
4.76	0.67	5.27	2.25	5.78	33.83	6.29	138.73
4.77	0.70	5.28	2.28	5.79	35.34	6.30	141.15
4.78	0.72	5.29	2.31	5.80	36.87	6.31	143.58
4.79	0.75	5.30	2.34	5.81	38.44	6.32	146.02
4.80	0.78	5.31	2.38	5.82	40.03	6.33	148.48
4.81	0.80	5.32	2.41	5.83	41.65	6.34	150.96
4.82	0.83	5.33	2.44	5.84	43.29	6.35	153.44
4.83	0.86	5.34	2.47	5.85	44.97	6.36	155.94
4.84	0.89	5.35	2.50	5.86	46.71	6.37	158.46
4.85	0.91	5.36	2.53	5.87	48.49	6.38	160.99
4.86	0.94	5.37	2.56	5.88	50.30	6.39	163.53
4.87	0.97	5.38	2.59	5.89	52.13	6.40	166.08
4.88	1.00	5.39	2.62	5.90	54.00	6.41	168.65
4.89	1.03	5.40	2.65	5.91	55.90	6.42	171.23
4.90	1.06	5.41	2.68	5.92	57.83	6.43	173.83
4.91	1.09	5.42	2.71	5.93	59.79	6.44	176.44
4.92	1.12	5.43	2.74	5.94	61.78	6.45	179.06
4.93	1.15	5.44	2.76	5.95	63.81	6.46	181.66
4.94	1.18	5.45	2.79	5.96	65.86	6.47	184.27
4.95	1.21	5.46	2.97	5.97	67.95	6.48	186.90
4.96	1.24	5.47	3.28	5.98	70.06	6.49	189.53
4.97	1.27	5.48	3.67	5.99	72.21	6.50	192.18
4.98	1.30	5.49	4.13	6.00	74.39		
4.99	1.34	5.50	4.64	6.01	76.59		
5.00	1.37	5.51	5.20	6.02	78.83		

Stage-Area-Storage for Pond SGWs: SGW-Combo

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
4.50	10,502	0	5.52	21,440	17,520
4.52	10,813	213	5.54	21,573	17,950
4.54	11,124	433	5.56	21,705	18,383
4.56	11,435	658	5.58	21,837	18,818
4.58	11,746	890	5.60	21,969	19,256
4.60	12,058	1,128	5.62	22,102	19,697
4.62	12,369	1,372	5.64	22,234	20,140
4.64	12,680	1,623	5.66	22,366	20,586
4.66	12,991	1,879	5.68	22,499	21,035
4.68	13,302	2,142	5.70	22,631	21,486
4.70	13,613	2,412	5.72	22,763	21,940
4.72	13,924	2,687	5.74	22,895	22,397
4.74	14,235	2,968	5.76	23,028	22,856
4.76	14,547	3,256	5.78	23,160	23,318
4.78	14,858	3,550	5.80	23,292	23,783
4.80	15,169	3,851	5.82	23,424	24,250
4.82	15,480	4,157	5.84	23,557	24,720
4.84	15,791	4,470	5.86	23,689	25,192
4.86	16,102	4,789	5.88	23,821	25,667
4.88	16,413	5,114	5.90	23,954	26,145
4.90	16,724	5,445	5.92	24,086	26,625
4.92	17,036	5,783	5.94	24,218	27,108
4.94	17,347	6,127	5.96	24,350	27,594
4.96	17,658	6,477	5.98	24,483	28,082
4.98	17,969	6,833	6.00	24,615	28,573
5.00	18,280	7,196	6.02	24,765	29,067
5.02	18,401	7,562	6.04	24,915	29,564
5.04	18,522	7,932	6.06	25,066	30,064
5.06	18,643	8,303	6.08	25,216	30,566
5.08	18,764	8,677	6.10	25,366	31,072
5.10	18,886	9,054	6.12	25,516	31,581
5.12	19,007	9,433	6.14	25,666	32,093
5.14	19,128	9,814	6.16	25,817	32,608
5.16	19,249	10,198	6.18	25,967	33,126
5.18	19,370	10,584	6.20	26,117	33,646
5.20	19,491	10,973	6.22	26,267	34,170
5.22	19,612	11,364	6.24	26,417	34,697
5.24	19,733	11,757	6.26	26,568	35,227
5.26	19,855	12,153	6.28	26,718	35,760
5.28	19,976	12,551	6.30	26,868	36,296
5.30	20,097	12,952	6.32	27,018	36,835
5.32	20,218	13,355	6.34	27,168	37,376
5.34	20,339	13,761	6.36	27,319	37,921
5.36	20,460	14,169	6.38	27,469	38,469
5.38	20,581	14,579	6.40	27,619	39,020
5.40	20,702	14,992	6.42	27,769	39,574
5.42	20,824	15,407	6.44	27,919	40,131
5.44	20,945	15,825	6.46	28,070	40,691
5.46	21,066	16,245	6.48	28,220	41,254
5.48	21,187	16,668	6.50	28,370	41,820
5.50	21,308	17,093			